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FOURTH ANNUAL REPORT

OF THE

BOARD OF PUBLIC WORKS

TO THE

COMMON COUNCIL

OF

THE CITY OF CHICAGO.

For the Municipal Fiscal Year ending March 31st, 1865.

CHICAGO:
GEORGE H. FERGUS, BOOK AND JOB PRINTER
No. 12 CLARK STREET.

1865.

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1898.

BOARD OF PUBLIC WORKS.

MEMBERS OF THE BOARD.

JOHN G. GINDELE, COMMISSIONER AND PRESIDENT.
FREDERICK LETZ, COMMISSIONER AND TREASURER.
ORRIN J. ROSE, COMMISSIONER.
WILLIAM GOODING, } Members acting in Board only on matters pertaining to cleansing Chicago River.
ROSWELL B. MASON, }

OFFICERS.

A. W. TINKHAM, SECRETARY.
E. S. CHESBROUGH, CITY ENGINEER.

COMMISSIONER'S REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, JULY 10, 1865.

To the Mayor and Aldermen of the City of Chicago, in Common Council assembled:—

The Board of Public Works have the honor to report to you their proceedings, and to submit to you detailed exhibits of their expenditures for the fiscal year ending March 31st last. The Board would have been pleased to have brought their report before you more promptly, but a press of current business has delayed its preparation to the present time. We will notice in the same order as usual the various works entrusted to our care, and will endeavor to do so at no greater length than is demanded by their importance.

WATER WORKS.

The past year has been one of unusual expenditures on the Water Works; but the outlay we trust has been attended with results fully compensating for the money spent. Of course, the extraordinary prices of labor and materials have made the running expenses and repairs for the year unusually heavy, and have made all the works entered upon during the year to cost more than in ordinary times. Still, the income from the water rents has been considerably larger than in any previous

year; and we believe that all the expenditures for the operating of the works, and for the various important improvements and additions in progress during the year, have been managed economically. The Board believe that the works are in as thorough a state of repair as at any time previous, and never more efficient. The amount of water consumed is, however, increasing rapidly year by year, and has now nearly equalled the power of the smaller of the two engines, and it is evident that, to ensure maintaining a regular and full supply to the city, another engine must be erected without delay. Of this subject, we shall have occasion to speak more fully before closing this report.

Excepting that it has become necessary from time to time to shut off the water from limited districts for repairs and laying new pipes, the supply to the city was interrupted during the year only for a few hours one night while the pump well was being cleaned out, the reservoirs being kept full in the meanwhile for use in case of fire.

The quality of the water has not always been good, but in general it has been so. The Board do not doubt that the time is not distant when, from the measures now in progress, the water furnished to the city will be quite free from all impurities, except occasionally the slight milkiness imparted to the lake water by storms, which is caused by the clay banks a long distance North of the city, and frequently extends many miles out from the shore.

EXPENDITURES DURING THE YEAR.

COST OF ADDITIONS TO WORKS DURING THE YEAR:—

Tunnel two miles under Lake Michigan,----------	$106,389.24
New 2 ft. main on Wabash Avenue, from Adams to 22d Street—9817 ft.,----------	81,249.90
11½ miles of distributing water pipes,----------	104,828.50
New engine,----------	7.26
	$292,474.90

INTEREST AND OPERATING EXPENSES DURING THE FISCAL YEAR:—

Interest, including $3,051.01, charged over from discount account,	$77,518.20
Expenses at the pumping works,	43,839.95
Improvements, such as West Reservoir iron fence, &c., &c.,	5,719.57
Water meters,	3,719.05
Repairs and all operating expenses, except at pumping works,	42,798.20
	$173,594.97

WATER RENTS.

The income from water rents for the year, including $699.34, the profits of tapping pipes, amounted to $224,902.57, exceeding that of the year next preceding by $32,656.18.

A very considerable portion of the tax for the use of water, is now determined by meters. Of the total water rent stated above, the amount of $31,357 was determined by meters. The Board have in use 133, all Worthington meters. Although attended with considerable expense, we are satisfied that the expense is more than repaid by the greater amount of water rent thus obtained, while, at the same time, their use is satisfactory to almost all large consumers, who are willing to pay for the amount of water taken by them, when it is ascertained by actual measurement.

COST OF THE WATER WORKS.

The Water Works, not including the Tunnel under the Lake, have cost, to March 31st, 1865,	$1,381,735.27
Lake Tunnel expenditures to same date,	109,308.86
	$1,491,044.13

Means to pay for the above have been obtained, as stated below:—

Six per cent. Bonds, -	$1,030,000	
Seven per cent. " -	278,000	$1,308,000.00
Deduct discount on 6 per cent. Bonds,		57,133.08
		$1,250,866.92
Am't overdrawn from City Treasury,		51,877.85
Balance obtained from Water Rents,		188,299.36
		$1,491,044.13

ADDITIONS TO THE WORKS DURING THE YEAR.

As already noticed, nearly three hundred thousand dollars have been expended during the last year, on the two feet Wabash Avenue main, on nearly 12 miles of distributing pipes, and on the tunnel in progress under Lake Michigan. As the balance in the Treasurer's hands at the commencement of the year, was but about six thousand dollars, and no more than 175 bonds have been sold during the year, it follows that there have been overdrawn from the City Treasury $51,877.85, an amount which would have been greater but for the premium obtained on the bonds, and the excess of Water Rents over the interest and expenses for the year.

The Wabash Avenue main is a most important improvement. It extends from Adams Street to Twenty-Second Street, and will probably be connected at some future time with a reservoir in the more Southern part of the South Division. Prior to its being put into use, the supply was wholly insufficient in all that part of the South Division South of Adams Street, and particularly in the more remote parts, as at Camp Douglas, having a population during the year of from 10,000 to 14,000, and at the large packing-houses and other establishments extending along Archer Road to the Rolling Mills. Since the laying of the main, the Board have been gratified to observe a total cessation of the previously existing complaints of an inadequate supply of water.

The Board have laid, during the past year, $11\frac{4577}{5280}$ miles of

distributing mains, which were laid in the three divisions, as follows:—

South Division,	19,118 feet.
West Division,	35,268 "
North Division,	8,271 "
Total,	62,657 feet or

11 miles 4577 feet.

The prices of iron, lead, and labor have ruled very high, during the year, as is well known, and as a consequence, these pipes have been put down at an unusually high cost.

In 1861, 13,761 ft. of distributing pipes were laid, costing,				$12,008.00
In 1862, 50,881 ft.	"	"	"	39,197.00
In 1863, 68,691 ft.	"	"	"	75,241.00
In 1864, 62,657 ft.	"	"	"	104,828.50

The Board have, however, considered the supply of water to the city as one of those necessities which cannot be dispensed with, and it has not seemed to us proper to cease extending the pipes merely on account of the unusual cost of the work. As a rule, the Board have laid pipe only where there would be a sufficient income to pay the interest on its cost when laid; and yet the petitions which the Board had on hand at the close of the fiscal year, and have received since then, are for no less than fifteen miles of pipe, all from streets so far occupied as to pay, as an annual water tax, the minimum rate required by the Board, which, at present prices, amounts to about fifteen cents per running foot. As every day adds to the number of these petitions, your honorable body will see that it will be necessary to lay as large an amount of pipe this year as for several years past, and that it is not practicable to supply immediately all the localities desiring an extension of the pipes. The following tables, showing the total amounts of pipes laid by this City and several other cities, and showing the relations of their incomes to their amounts of pipes, will be found of interest. Our population is spread over a larger territory than is usual

with most cities, and it accordingly takes here a proportionately greater supply of water and gas pipes, and of street and other public improvements to supply a given population.

Amounts of supply and distributing mains in several cities and annual water tax:—

New York,	294	miles	3334 ft.	Ann'l	Income,	$907,234.27
Philadelphia,	363	"	4031 ft.	"	"	586,968.71
Brooklyn,	171	"	742 ft.	"	"	386,416.08
Boston, ('63)	135	"	2143 ft.	"	"	394,506.25
Cincinnati,	93	"	545 ft.	"	"	259,286.02
Chicago,	131	"	3495 ft.	"	"	224,902.57

The Board, last year, contracted for some 500 tons of pipes, to be delivered on the opening of navigation this year, all of which have since been received and are being laid. Besides this amount, they have lately contracted for 500 tons pipes at prices much below those of last year. All these several lots will lay about 12½ miles of pipe, and will not be sufficient to supply all the localities needing them.

LAKE TUNNEL.

At the time of rendering our last annual report, operations had just commenced at the Lake Tunnel. The work was commenced on the 17th of March previous, and when the report was made, the iron cylinders making the upper part of the land shaft had been sunk through the sand, and the underlying clay through which the tunnel was to be constructed had been reached. As was then hoped, no serious difficulty has arisen in the prosecution of the work on the land shaft and shore end of the tunnel since the clay has been reached. At the close of the fiscal year, the tunnel had been finished from the land shaft out under the lake 2139 feet, and at the date of this report is finished 3023 feet, with a present rate of progress of about 12 feet per day. No work has yet been done on the outer shaft, although the crib making the pier with which the shaft will be surrounded in the lake is built and ready for launching, and the iron cylinders for the shaft are all ready. The Board had

the assurance of the contractors, and it was their expectation, that the crib would be put in place and shaft sunk last fall, and that the work would be prosecuted from the lake shaft shorewards during the winter. The Board were, however, disappointed in their expectations, and on the 22d March addressed a note to the contractors, Messrs. Dull & Gowen, urging a vigorous prosecution of the work on the crib, and requiring them to have it launched ready for towing out to the terminus of the tunnel by the 15th of May. The contractors in their reply promised a compliance with the order of the Board, and were confident that the crib would be afloat at the time set. It is hoped now that it will be launched in a few days. The five moving screws to which the crib is to be fastened when floated out, are in place, having been embedded in the clay at the bottom of the lake. The work on the crib has been most thoroughly done, and Messrs. Dull & Gowen are entitled to much credit for it. The immediate supervision and direction of the construction of the crib was entrusted by the contractors to Mr. Geo. R. Bramhall. The Board desire to express their appreciation of the ability shown by Mr. Bramhall in this work. The City has been exceedingly fortunate in that the building and launching of the crib fell into the hands of so skilful and accomplished a mechanic.

The completion of the tunnel will necessarily be delayed much beyond the time required by the contract, but if the crib is successfully set without much further delay, it is believed that the tunnel will be finished by the close of next year.*

NEW ENGINE AND ENGINE HOUSE.

In our last report it was remarked that the consumption of water in the city was rapidly increasing, and approximating towards the amount which the present engines could be safely relied on to supply, and that it would be necessary soon to procure another engine.

* Since going to press, the crib has been successfully launched and sunk in the lake, at the place marked for the outer shaft, two miles from the lake shore.

The subject has been under examination throughout the year. The Board have visited a number of Water Works having pumping machinery, and have caused their Engineer at the pumping works, Mr. Cregier, to visit all the principal Water Works of the country making use of engines. Having sought all the information to be obtained from other works, plans and specifications have been prepared for an engine of a capacity sufficient to pump 18,000,000 gallons of water in 24 hours, under a head of 125 feet, with a pressure of steam on the boiler of 25 lbs. to the inch. The Board recommend that this engine be put up as soon as practicable. The erection of this engine, however, involves a large outlay. The engine itself will cost as much as one hundred thousand dollars, and a very large expenditure will be needed to prepare a pumping well and suitable foundations for it. Where the engine shall be located has been a question of much discussion. If placed in connection with the present engine house, it is feared that the excavations for the new pump well and foundations will disturb the foundation of the present building with its machinery, and interrupt the working of the engines and the supply of water to the city. The injury which would result from the interruption of the supply of water would be so serious, that it has seemed to the Board, that any location for the proposed engine which would endanger the present supply, was out of the question. The Board have, therefore, finally concluded to put in a pump well with foundations wholly separate from the present building and removed from it, and large enough for all the engines which will be likely to be needed for many years. The cost, of course, will be large, amounting for the building complete with its connections to as much as for the engine itself.

SEWERAGE WORKS.

The sewers of the city have been maintained throughout the year, in a good state of repair and efficiency. New sewers were constructed during the year, as follows, viz.:

SEWERS CONTRACTED TO BE LAID IN 1863, BUT FINISHED IN 1864.

South Division,	8,519	feet,	costing,	$27,379.69
West "	1,424	"	"	2,973.62
North "	1,293	"	"	2,010.37

SEWERS CONTRACTED FOR IN 1864, AND LAID DURING THE SAME YEAR.

South Division,	2,393	feet,	costing,	$12,816.49
West "	6,346	"	"	24,105.98
North "	5,046	"	"	17,935.33
Total,	25,021 ft. or about $4\frac{3}{4}$ miles,		costing,	$87,221.48

In the accompanying report of the City Engineer, will be found a detailed statement showing the amounts of each of the various sizes of sewers laid in this city, and showing the total length of all the public sewers laid and in use in the city, at the close of the fiscal year, to be $69\frac{2394}{5280}$ miles.

The repairs for last year, cost	$4,597.63
The cleansing of the sewers, "	9,417.81

INTEREST AND EXPENSES FOR THE YEAR.

Interest on sewerage Loan Bonds,	$74,156.85
Sinking Fund, am't set aside of tax 1863,	17,398.75
Salaries and Miscellaneous expenses,	9,780.46
Repairs and cleaning as above,	14,015.44
	$115,351.50

SEWERAGE LOAN BONDS.

Six per cent bonds outstanding April 1, '65,---$87,000.00
Seven " " " " " 1,000,000.00

Total am't of sewerage bonds outstanding, $1,087,000.00

We invite your perusal of the interesting report of sewers, by Mr. Clarke, the principal assistant-engineer, and included in the report of the city engineer.

SEWERAGE SINKING FUND.

By the charter the Board are limited to the bonds of the City of Chicago for investment, and to the present time the proceeds of the Sinking Fund, except the small amount due upon the old mortgages obtained from the former sewerage board, have been wholly applied to the purchase of sewerage bonds.

Balance in hands of City Treaurer, April 1, '65, $271.55
Due from the sewerage tax of 1864,----------18,439,57
Mortgages now due,---------- 5,867,10

Amount of Sinking Fund not yet applied to the purchase of Sewerage bonds.----------$24,578.22

There have been purchased to the present time, and canceled of sewerage bonds $100,000, of which amount $42,000 were canceled during the fiscal year just closed.

CLEANSING CHICAGO RIVER.

The state of the river has been substantially as it has been for the last few years; but rather better than worse. It has been a most important year, however, in this respect, that measures have been agreed upon and set in motion, which it is hoped will finally effectually remove all offensiveness from the main river and south branch. By the amendments to the charter last winter, two new members were added to the Board, and empowered to act with the other members, but only on matters pertaining to the cleansing of the Chicago River. The full Board for objects pertaining to the cleansing of the river, consists therefore of five members, the two new members being Messrs. Roswell B. Mason and William Gooding. The charter amendments also authorized a loan of two millions of dollars for these purposes, under the same provisions as the Sewerage Loan, as regards a sinking fund and otherwise.

During the discussions which were held last winter, as to the legislation necessary to best provide for efficiently remedying the condition of the river, and agreeably to a recommendation from a joint committee from the Common Council and the Board of Trade of this City, a commission was appointed by the Council consisting of the Mayor, Hon. F. C. Sherman, and five engineers, Messrs. William Gooding, R. B. Mason, John Van Nortwick, E. B. Talcott, and E. S. Chesbrough. The report of this commission is of so much interest and importance that to preserve it in a permanent form we have appended it to this report.

The project which this commission recommended was, that the Illinois and Michigan Canal, between Chicago and a point about three miles this side of Lockport, be deepened so that the water of Lake Michigan will flow continually through the Canal to the Illinois River. The surface of the Canal, as is generally

known, is now about eight feet above the level of the lake. The original plan for the Canal, was that it should be made in the same way as proposed by the commission, and much of the work was done on this deep cut plan, all of which will lessen the amount of work to be done now. Immediately after the organization of the Board in the present state, this same plan was adopted by us, and recommended to your honorable body. Having obtained from you the requisite authority, surveys were immediately instituted to secure the best line, and determine the quantities of the earth and rock cuttings to be done, and as speedily as practicable, it is proposed to proceed with the execution of the work. We regard the deepening of the canal as an incipient step to that larger undertaking, the enlarged and deepened Ship Canal, the construction of which we believe, will add to the commerce and business of this city to an extent which cannot now be estimated.

A most important law was passed by the State Assembly, authorizing the city to cut down this summit division of the canal, as it is called, and for the moneys so expended, creating a lien upon the canal and its revenues after the payment of the present canal debt. It is thought by those most conversant with the business of the canal, that under that lien the city will have refunded to it all the money which will be spent on this improvement. We have appended a copy of the law to this report.

CHICAGO HARBOR.

The works undertaken during the year for the preservation of the harbor have been very extensive. It is believed that their construction will relieve the city from any very large expenditures for several years to come.

During the year the dredging for the preservation of the direct channel through the bar has been continued when the state of the lake has permitted it, and there is now a commodious and easy entrance to the harbor, with a depth of water of 14 feet with the lake at its ordinary height, or of 12 feet at standard low water.

The most important work, however, accomplished during the year, has been the extension outwards into the lake of the north pier some four hundred feet. It had for a considerable time been evident to the Board that the most thorough measures were necessary for the preservation of the harbor, and we early last year directed the city engineer to gather all information accessible to him, relating to harbor preserving works, and as speedily as practicable to mature a plan for the preservation of the channel through the bar. In July last, having previously decided to extend the pier, the project of the Board was laid before you, and speedy action was requested on it. The recommendation of the Board was promptly adopted, and the Council in August authorised the work and appropriated the sum of seventy-five thousand dollars for its cost. The weather afterwards, however, offered very few favorable opportunities for the working of a dredge in the lake in preparing for the sinking of the cribs, and but about eighty feet were got in last fall. During the present season, the work has been prosecuted with more success, and the cribs have been sunk for the whole length of the proposed pier extension, four hundred feet, thus sheltering, and it is hoped securing, the newly dredged out channel through the bar.

A small sketch is given herewith, showing the pier as extended, the bar in its present state, and the new and old channels for entering the harbor.

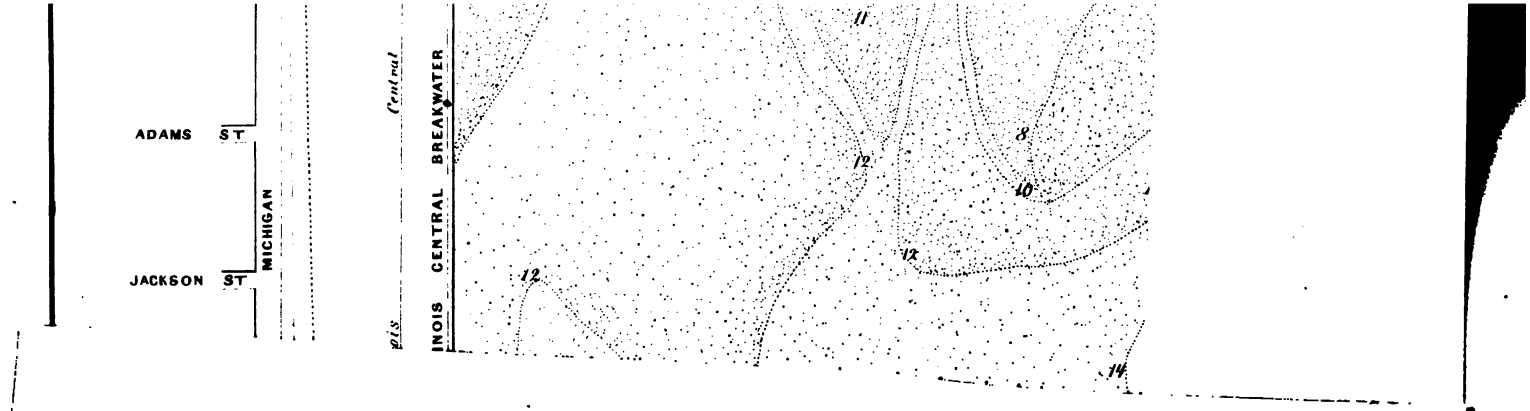
All of the work has been done with the sanction of the U.S. War Department, and under the general direction of one of its officers. It would seem that the work should have been wholly done, and paid for by the United States, and it is to be hoped that the outlay which has now been made by the city, may be hereafter refunded to it.

Embraced in the report of the city engineer is a most interesting report from Col. T. J. Cram, charged by the War Department with the care of the lake harbors, in which he discusses at length the manner of formation of the bar across the mouth of the harbor, and the growth into the lake of the shore to the north of the pier, and indicates a probable limit when the extension of the shore into the lake and the growth of the bar will be arrested, and the mouth of the harbor acquire something of permanency in its character and shape. The discussion of the subject by him, upon facts derived from observation, shows a careful study of the causes producing the changes, which from the earliest observation of our oldest citizens have been in constant progress at the mouth of the harbor, and will be particularly interesting to the quite large number of them who have made these changes and the means of securing the harbor against their effects a matter of careful consideration.

For many years the height of the lake has been daily guaged, under the Sewerage Department, and a tabular statement of its various heights through a term of years commencing with 1855, is given in the report of Mr. Clarke, on sewerage, already referred to.

The table is interesting and valuable. We give below a statement of the highest, lowest, and average levels attained by the lake during this series of years:—

The levels are so many feet above or below standard low water.


ADAMS ST
JACKSON ST
MICHIGAN
Central
g'ts
INOIS CENTRAL BREAKWATER
11
8
12
10
12
12
14

Years.	Highest level reached by the Lake during the year.	Lowest level to which the Lake fell during the year.	Average level of the Lake during the year.
1855,	3.45	0.15	1.56
1856,	3.05	0.42	1.60
1857,	4.35	0.60	2.42
1858,	4.69	1.33	2.90
1859,	4.45	1.31	2.98
1860,	3.53	1.30	2.54
1861,	4.40	0.90	2.56
1862,	3.30	1.20	2.50
1863,	3.30	0.70	2.10
1864,	2.80	—0.80	1.57

It will be observed that the lake was, during this period, when at its greatest height, 5.49 feet higher than when at its lowest level. The greatest fluctuation in one year was 3.75 feet.

STREET WORK.

The decision of the court, that the provisions of the charter of 1863, under which the improvements of the streets and alleys were made, were in conflict with the state constitution, left the city last year without any law by which such improvements could be carried on. Accordingly, it was necessary to let a large amount of street work lie over to this year, which ought to have been done last year. The special assessments for this year will, in consequence, be unusually heavy. A large number of most important street improvements have already been recommended to you and approved by you, and it is hoped that during the coming year the condition of several of the most important thoroughfares will be materially bettered.

The city, by its expenditures from the general fund, does not, however, at all keep pace with what is being done by special assessment. The appropriations for street repairs and cleaning are altogether too limited. In 1857 and 1858, about as much money was spent for these purposes as now, and as prices then were only half what they are now, and the city was only about half as large, it follows that about three or four times as much in proportion was appropriated then as now. The Council has, for instance, appropriated this year, for the South Division, $24,000. This sum of money is expected to keep clean all the improved streets and alleys of the South Division, and to do more or less repairing on them; to build, and keep in repair, all the culverts, aprons, and crosswalks of more than one hundred miles of its streets and alleys; to keep the earthen streets thrown up in shape and their ditches in order; and, finally, to pay the expenses for inspecting the sidewalks, and for enforcing the orders of the Board, requiring owners to build or repair their sidewalks.

On one-third or one-fourth of a mile of a street paved by special assessment, property owners are required to pay more than the annual appropriation made by the city for the repairs and cleaning of the streets and alleys, and for the culverts, aprons, street-crossings, and sidewalks of the whole South Division.

While the Board, however, are of the opinion that a larger amount of money could be wisely spent for keeping the streets and alleys of the city in order, it seems to us that many of the complaints in regard to their condition are quite unreasonable. They do not take into account the many difficulties, peculiar to Chicago, in the way of their immediate improvement. The city is comparatively new, and although it may do much more than is usual with other and older cities of its size and resources, it will still take a long time before all the streets and alleys can be improved. The site of the city is low and nearly level, and almost without natural drainage. Its streets are in the main formed of the natural soil, generally of clay, or clay mixed with vegetable mould, and most of the streets must be in this state for years to come. In wet weather, especially in the spring and fall, when there is unavoidably a great deal of standing water, such streets being continually worked over and ploughed up by teams become exceedingly muddy and miry—nor can they be otherwise, at such times, until they are filled up and protected with some sort of a pavement, or other firm covering. The work of paving or otherwise improving them, is being gradually extended, taking first in order the business streets and alleys, and the various avenues connecting the city and country, and is progressing probably more rapidly than is desired by the property owners who have to pay for most of the the improvements. Still this is a work of time and much cost; and it is not reasonable to suppose that the city can at once get its thoroughfares into as good a state as the streets of older places, with good natural drainage, with gravelly or rocky soils, and which have attained their present state of improvement through a long period of time.

As the streets of the city are generally as remarked above, without being paved or otherwise protected, it is of course more difficult to keep clean those streets which are improved. The mud is being continually deposited on them from the adjacent or intersecting unimproved streets and alleys, and the labor of keeping the former clean is largely on account of their proximity to such unimproved streets.

By improving all the streets and alleys of certain limited districts, including the business parts of the South, West, and North Divisions, as the Board aim to do, it is hoped that this evil will be in part remedied; and that where the travel and transportation are heaviest, and good streets are most needed, they will soon be had.

It is proper for the Board, at this time, to call attention to the kind of laborers in general use on street work, and which makes such work more expensive than that of other departments, as the water and sewerage. It has always been the practice to afford employment on the streets, as far as practicable, to old and comparatively feeble men, the present price paid being one dollar and fifty cents per day. Such labor is, of course, unprofitable, and the burden of it all falls on the street work. The system was not, however, established by the Board, and we have not felt that it was the wish of the Council or the citizens that it should be changed.

It is quite likely that more or less of the work of cleaning and repairing the streets could be better done by contract than by day labor. The Board are quite willing to try this method wherever it shall be practicable, and promise better results than the present system of doing the work by laborers in the employment of the city.

The Board desire to do all that is possible with the limited appropriations made, but they are wholly inadequate to maintaining the streets of the city in tolerable order.

OPENING AND EXTENDING STREETS AND ALLEYS.

The following streets and alleys were ordered opened, widened, or extended by the Council, during the year:—

Division St. Extended and widened from Clark St. to Lake Michigan, so that the street shall be the full width of sixty-six feet.

Fourteenth St. Extended from State st. to Indiana Ave.

Lumber St. Extended from Union St. to Halsted St.

North Clark St. Straightened from North Avenue to Fullerton Avenue.

Twentieth St. Extended east from State St. to lands of Ill. Cent. R. R.

Alley. Opened through block 2, Clark's Add., and block 3, S.W. ¼, Sec. 22, 39, 14.

Alley. Opened in block 6, Assessors' Div., Sec. 22, 39, 14.
" " " 7, " " "
" " " 8, " " "
" " " 9, " " "
" " " 13, " " "
" " " 14, " " "
" " " 15, " " "
" " " 16, " " "

SIDEWALKS.

The following statements show the work done on sidewalks, ordered by the Council, during the year. As much, or more, is, however, done under the orders of the Board to have walks relaid.

SIDEWALKS ORDERED BY THE COUNCIL DURING THE YEAR.

SOUTH DIVISION.

S. side	25th st. bet. Cottage Grove av. and Indiana av.	Laid.
S. side	Archer rd. bet. Halsted st. and Lime st.	Laid.
S. side	26th st. bet. Cottage Grove av. and Indiana av.	Partly laid.
N. side	Alley in block 119 School sec. add. to Chicago.	Not necessary.
W. side	Burnside st. from 16th st. north to terminus.	Partly laid.
N. side	21st st. bet. State st. and Indiana av.	Laid.
E. side	Michigan av. from River st. 40 ft. south thereof.	Laid.
S. side	River st. bet. Michigan av. and alley next east.	Laid.
S. side	22d st. bet. State st. and Buddan st.	Laid.
N. side	21st st. bet. State st. and Archer road.	Laid.
B. sides	Elgin st. bet. Purple st. and Stewart av.	Partly laid.
N. side	15th st. bet. State st. and Burnside st.	Laid.
E. side	Prairie av. bet. 26th st. and 29th st.	Laid.
S. side	14th st. bet. State st. Michigan av.	Laid.
E. side	S. Clark st. bet. 18th st. and 22d st.	Partly laid.
E. side	Kankakee av. bet. 26th st. and 29th st.	Partly laid.

WEST DIVISION.

N. side	18th st. bet. Canal street and Halsted st.	Not laid.
N. side	Bunker st. bet. Canal st. and Clinton st.	Laid.
W. side	Ruble st. bet. 16th st. and 18th st.	Partly laid.
S. side	Bunker st. bet. Jefferson st. and Desplaines st.	Partly laid.
S. side	DeKoven st. bet. Jefferson st. and Halsted st.	Laid.
S. side	Forquer st. bet. Jefferson st. and Halsted st.	Laid.
N. side	12th st. bet. Jefferson st. and Desplaines st.	Laid.
W. side	Desplaines st. bet. Taylor st. and DeKoven st.	Partly laid.
S. side	Catharine st. bet. Stewart av. and Jefferson st.	Partly laid.
E. side	Union st. bet. Maxwell st. and O'Brien st.	Not laid.
S. side	Liberty st. bet. Canal st. and Stewart av.	Partly laid.
S. side	Irwin st. bet. Canal st. and Arthur st.	Partly laid.
N. side	18th st. bet. Canal st. and Chicago river.	Laid.
W. side	Aberdeen st. bet. Polk st. and Harrison st.	Laid.
W. side	Blue Island av. bet. Henry st. and 16th st.	Laid.

WEST DIVISION, continued.

W. side	Morgan st. bet. Randolph st. and Jackson st.	Laid ex. 120 ft.
E. side	Loomis st. bet. Van Buren st. and Harrison st.	Nearly all laid.
B. sides	Throop st. between 12th st. and Mitchell st.	Laid.
S. side	Better st. bet. May st. and Sholto st.	Reconsidered & ref'd.
N. side	Front st. bet. Carpenter st. and 5th st.	Partly laid.
N. side	Milwaukee av. bet. Elston rd. and Rucker st.	Laid.
N. side	Warren st. bet. Hoyne st. and Leavitt st.	Not laid.
B. sides	Washington st. bet. Lincoln st. and Robey st.	Laid ex. 25 ft.
E. side	St. John's Place bet. Carrol st. and Depot place.	Not laid.
E. side	Rose st. between Chicago av. and Cornell st.	Not laid.
S. side	Fry st. bet. Rose st. and Holt st.	Laid.
S. side	Chicago av. bet. Paulina st. and Hoyne st.	Partly laid.
E. side	N. Ada st. bet. Randolph st. and Lake st.	Partly laid.
N. side	Hubbard st. bet. Robey st. and Leavitt st.	Not laid.
S. side	Indiana st. bet. Paulina st. and Wood st.	Not laid.
N. side	Washington st. bet. Hoyne st. and Oakley st.	Partly laid.

NORTH DIVISION.

W. side	Kingsbury st. bet. Kinzie st. and Chicago av.	Laid.
N. side	Superior st. bet. Market st. and Kingsbury st.	Laid ex. 75 ft.
S. side	Oak st. bet. Green Bay st. and Lake Michigan.	Laid.
E. side	Franklin st. bet. Kinzie st. and Chicago av.	Partly laid.
N. side	Huron st. bet. Clark st. and Dearborn st.	Laid.
S. side	Huron st. bet. Wells st. and Franklin st.	Laid.
N. side	Elm st. bet. Wolcott and Lake Michigan.	Laid ex. 250 ft. repo'd
S. side	Illinois st. bet. Wells st. and Franklin st.	Laid. [not necessary.
B. sides	Sedgwick st. bet. Huron st. and Chicago av.	In progress.
S. side	E. White st. bet. Dearborn st. and Wolcott st.	Laid.
B. sides	Schiller st. bet. Wells st. and Clark st.	Partly laid.
N. side	Belden st. bet. Green Bay st. and Little Fort rd.	Laid.
B. sides	Linden st. bet. Wells st. and Sedgwick st.	Street not opened.
B. sides	Twomey st. from Sedgwick st. to W. terminus.	Laid.
B. sides	Schiller st. bet. Clark st. and Lake Michigan.	Partly laid.
W. side	Clark st. from Asylum st. to Wells st. and W. side Wells st. N. to where walk is laid.	Not laid.
N. side	Wisconsin st. bet. Clark st. and Larrabee st.	Partly laid.
E. side	Little Fort rd. from its junction with Wells st. to Asylum place.	Partly laid.
B. sides	Menominee st. bet. Wells st. and Sedgwick st.	Partly laid.
S. side	Black Hawk st. bet. Larrabee st. and Mohawk st.	Laid.
N. side	North av. bet. Sheffield av. and N. av. bridge.	Partly laid.
S. side	Carl st. bet. Wells st. and Lasalle st.	Laid.

THE FOLLOWING WILL SHOW THE PRESENT CONDITION OF SIDEWALKS REPORTED IN LAST YEAR'S REPORT AS NOT LAID OR INCOMPLETE:—

SOUTH DIVISION.

E. side	Indiana av. bet. 22d st. and Ridgely place.	Partly laid.
W. side	Dearborn st. bet. Archer rd. and 22d st.	Laid.
E. side	Michigan av. bet. 12th st. and 23d st.	Laid.
W. side	Cottage Grove av. bet. Ridgely and Douglas pl.	Laid.
N. side	Douglas pl. bet. Cottage Grove av. and the Lake.	Partly laid.
B. sides	Indiana av. bet. 14th st. and 22d st.	Laid.
N. side	Douglas pl. bet. Cottage Grove and Kankakee av.	Laid.
E. side	Wabash av. bet. 22d and 24th st.	Laid.
W. side	Prairie av. bet. Cottage Grove av. and 29th st.	Partly laid.
S. side	22d st. bet. Archer rd. and Grove st.	Laid.
W. side	Wentworth av. bet. 17th st. and 18th st.	Laid.
S. side	17th st. bet. Wentworth av. and Clark st.	Laid.
N. side	Archer rd. bet. Lock st. and Reuben st.	Laid.
E. side	Deering st. bet. Archer rd. and Cologne st.	Laid.
W. side	Main st. bet. Archer rd. and Cologne st.	Laid.
S. side	Hickory st. bet. Mary st. and Lock st.	Not laid.
W. side	Deering st. bet. Archer rd. and Lyman st.	Laid.
N. side	Fuller st. bet. Archer rd. and Cologne st.	Laid.
W. side	Bonfield st. bet. Archer rd. and Hickory st.	Laid.
S. side	19th st. bet. Clark st. and State st.	Laid.
E. side	Joseph st. bet. Archer rd. and Hickory st.	Laid.
S. side	Cologne st. bet. Main st. and Deering st.	Laid.
N. side	Hickory st. bet. Mary st. and Deering st.	Laid.
W. side	Buddan st. bet. Archer rd. and Alexander st.	Laid.
E. side	Wentworth av. bet. 21st st. and 22d st.	Laid ex. 100 ft.

WEST DIVISION.

S. side	Washington st. bet. Robey st. and Hoyne st.	Laid.
B. sides	Park av. bet. Robey st. and Hoyne st.	Laid ex. 3 lots.
W. side	Hoyne st. bet. Madison st. and Van Buren st.	Laid.
B. sides	String st. from Canal Port av. South.	Not laid.
E. side	Jefferson st. bet. Judd st. and Meagher st.	Laid.
B. sides	Barber st. bet. Union st. and Halsted st.	Laid.
W. side	Ann st. bet. Lake st. and Kinzie st.	Partly laid.
E. side	Loomis st. bet. Van Buren st. and 12th st.	Partly laid.
N. side	Monroe st. bet. Morgan st. and Rucker st.	Laid.
W. side	Ridgeville rd. bet. Milwaukee av. and North av.	Not laid.
E. side	Jefferson st. bet. Mitchell st. and 22d st.	Partly laid.
W. side	Laflin st. bet. Van Buren st. and Taylor st.	Laid.
W. side	Noble st. bet. Milwaukee av. and Division st.	Not laid.
W. side	Ada st. bet. Lake st. and Randolph st.	Partly laid.
N. side	Rebecca st. bet. B. I. av. and Rucker st.	Laid.
N. side	North av. bet. Elston rd. and the bridge.	Partly laid.
W. side	Leavitt st. bet. Lake st. and Kinzie st.	Laid ex. 1 lot.
N. side	Washington st. bet. Oakley st. and Western av.	Not laid.
B. sides	Ewing st. bet. Canal st. and Beach st.	Laid.
B. sides	Evans st. bet. Union st. and Halsted st.	Not laid.
N. side	Van Buren st. bet. Sangamon and Aberdeen st.	Laid.

WEST DIVISION, continued.

W. side	Carpenter st. bet. Fulton st. and Kinzie st.	Parlty laid.
S. side	Catharine st. bet. B. I. av. and Morgan st.	Partly laid.
N. side	Van Buren st. bet. Throop st. and Loomis st.	Partly laid.
N. side	Jackson st. bet. Rucker st. and Loomis st.	Laid.
E. side	Throop st. bet. Jackson st. and Monroe st.	Laid bet. Monroe and
E. side	Peoria st. bet. Randolph st. and Washington st.	Laid. [Adams st.
B. sides	Kramer st. bet. Union st. and Halsted st.	Laid.
W. side	Holt st. bet. Chicago av. and Cornell st.	Laid.
B. sides	Catherine st. bet. Canal st. and Jefferson st.	Partly laid.
N. side	Jackson st. bet. Robey st. and Hoyne st.	Laid.
NE.side	Milwaukee av. bet. Reuben st. and Wood st.	In progress.
W. side	Halsted st. bet. Milwaukee av. and 4th st.	Laid.
S. side	Pratt st. bet. Milwaukee av. and Sangamon st.	Partly laid.
N. side	Liberty st. bet. Canal st. and Jefferson st.	Laid ex. 100 ft.
B. sides	Barber st. bet. Jefferson st. and Union st.	Laid ex. 25 ft.
B. sides	Canal st. bet. Van Buren st. and W. 16th st.	Laid ex. 150 ft.
E. side	Hoyne st. bet. Walnut st. and Lake st.	Not laid.
W. side	Aberdeen st. bet. Taylor st. and 11th st.	Laid.
W. side	Halsted st. bet. 22d st. and the bridge.	Laid.
B. sides	Park av. bet. Lincoln st. and Robey st.	Partly laid.
S. side	Fulton st. bet. Green st. and Elizabeth st.	Partly laid.
S. side	16th st. bet. Halsted st. and Rucker st.	Partly laid.
E. side	Elston rd. bet. Milwaukee R. R. Crossing and North av.	Not laid. Suit pending.

NORTH DIVISION.

B. sides	Whitney st. bet. Green Bay st. and Dearborn st.	Laid ex. block 12.
S. side	Goethe st. bet. Clark st. and Wells st.	Laid.
B. sides	Vine st. bet. Division st. and Vedder st.	Laid.
S. side	Oak st. bet. Clark st. and Wolcott st.	Not laid.
E. side	Otis st. bet. Division st. and Vedder st.	Laid.
B. sides	Grace st. bet. Division st. and Vedder st.	Laid.
S. side	Granger st. bet. Wells st. and Sedgwick st.	Laid.
B. sides	Lasalle st. bet. Division st. and North av.	In progress.

BRIDGES.

At the time of rendering our last report, we had just contracted for a new bridge at Randolph Street, with Mr. L. Boomer. In July succeeding, the new bridge was finished and in use.

The most important construction, in this department, accomplished during the year, was the building of State Street Bridge. At the beginning of the year, the city was without the right of way to the river on the North side, the land belonging to the G. & C. U. R. R. Co. On the 30th of May, 1864, the Board executed a contract with that Company, by which the right of way was ceeded to the city, the Council confirming the contract soon after. The construction of the bridge was entered upon as speedily as practicable, but it was not until the 11th of Jan. last, that the bridge was accepted at the hands of the contractors. Since then, the approaches have been built, and the bridge thrown open to public use. It passes over the railroad tracks in North Water Street at a height sufficiently great to permit the passage of locomotives and cars beneath, and is altogether the most commodious and convenient bridge connecting the North and South Divisions.

The bridge across the North Branch at North Avenue, and that across the South Branch at Fuller Street, failed at the close of the winter, and on the 18th of March last, the Board contracted with Newton Chapin to rebuild the first for $3700, and the latter for $6300.

The recent charter amendment, placing the appointment of the bridge tenders with this Board as formerly, seems to us a judicious provision. As the Board are responsible for the bridges, it would seem proper that we should have control over the persons tending them. Our only desire, so far as the making of these appointments is concerned, is to put into office faithful and efficient men,—those who will be the best men for their places.

WASHINGTON ST. TUNNEL.

The annoyances and losses caused by the many interruptions and delays in getting across the river by the bridges, have for a long time led many to look for some more certain means of passage and particularly by tunnel under the river. The necessity has grown more and more apparent as the business of the city has increased, until there seems now a very general demand that there shall be at least two tunnels built, connecting the South Division respectively with the West and North Divisions. The Board have already recommended the project to you, and in response to various ordinances and resolutions of of your honorable body, have prepared plans and specifications, and invited bids for one of these tunnels, that crossing under the South branch at Washington Street. The Board now only await your action correcting defects in existing ordinances relative to this tunnel, before proceeding with its construction. It is hoped that decided progress may be made on it during the present year. The tunnel connecting the South and North Divisions should follow as speedily as practicable.

PUBLIC BUILDINGS.

The Island Queen engine house, on West Lake St., in progress at the time of rendering the last annual report, was finished and occupied during the ensuing summer.

The new engine house on Maxwell St., was completed last fall, and turned over to the fire department for use.

For years it has been a great reproach to our City that there was no suitable building for the reception of patients affected with the small-pox. The Board have the gratification of reporting that this want is now wholly supplied by the convenient and commodious hospital erected under our supervision, on the lake shore, and on the grounds of the Chicago cemetery. It has been turned over to the health department, and is now in its charge.

During the year the North market has been raised, the cellar drained and flagged, and the grounds around the building raised to grade and planked. The market is greatly improved by this work.

PUBLIC PARKS AND CEMETERY.

The limited appropriation placed at the disposal of the Board for the benefit of the cemetery grounds, and the various public squares and parks of the city, have been barely sufficient to maintain their fences and sidewalks, and to keep the grounds in tolerable condition.

FIRE ALARM, POLICE, AND WATER TELEGRAPH.

During the year, a most important work has been consummated in the construction of the fire alarm, police, and water telegraph of Messrs. J. F. Kennard & Co. The work has been completed, and the fire alarm and police telegraph turned over to the Board of Police Commissioners. The telegraph connecting the engine houses, reservoirs, and office of the Board needs yet some work to perfect its operations.

LAMP POSTS.

We give below a list of all the various orders of the Council during the year, directing the erection of lamp posts in streets, and showing the progress made in carrying out these orders. The same is also shown as to the Council orders of previous years, for which posts had not been put up at the commencement of last year.

ORDERED BY COMMON COUNCIL DURING THE PAST YEAR.

SOUTH DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
River st., South Water st. to Rush Street bridge,	3	Lamps erected.
Kankakee av. near 24th st., and on 24th st. from said avenue to Cottage Grove av.	6	Lamps erected.
16th st., from Indiana av. to Prairie av.	3	Assessment made.
Calumet av., from 21st st. to 22d st.	3	" "
Prairie av., from 22d st. to 250 ft. North.	2	Lamps erected.

WEST DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
South-east cor. Carpenter and Fulton st.	1	Lamp erected.
Washington st., from Jefferson st. to Clinton st.	2	One lamp erected.
Jackson st., from Jefferson st. to Desplanes st.	2	Assessment made.
Aberdeen st., from Adams st. to Jackson st.	5	No pipe yet laid.
Monroe st., from Morgan st. to Aberdeen st.	6	One lamp erected.
Clinton st., from Jackson st. to Van Buren st.	5	Lamps erected.
Green st., from Randolph st. to Lake st.	2	" "
Wood st., from Washington st. to Warren st.	1	" "
Rucker st., from Mitchell st. to 22d st.	32	" "
Rucker st., from Madison st. to Monroe st.	3	" "

THE FOLLOWING LIST WAS REPORTED LAST YEAR AS INCOMPLETE OR NOTHING DONE:—

SOUTH DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
Harmon court, State st. to Michigan av.	2	Completed.
Clark st., from 12th st. to 18th st.	26	No pipe laid.
Jackson st., Clark st. to Lasalle st.	3	" "
Van Buren st., Wells st. to Market st.	7	" "
Archer road, State st. to Lock st.	66	" "
Michigan av., 18th st. to 22d st.	11	" "
4th av., from 12th st. 400 ft. South.	3	Lamps erected.
Indiana av., from 60 ft. South of 25th st. to 60 ft. North of 29th st.	10	" "

WEST DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
Warren st., Reuben st. to Robey st.	20	Completed.
Adams st., Rucker st. to within 250 ft of Morgan st.	8	"
Monroe st., Canal st. to Halsted st.	14	Two lamps erected.
Canal st., 16th st. to 18th st.	7	Six " "
18th st., Canal st. to Chicago river.	8	Five " "
Sangamon st., Van Buren st. to Tyler st.	5	No pipe laid.
Lincoln st., Hubbard st. to Fulton st.	10	" "
Lake st., Paulina st. to Leavitt st.	25	" "
Fulton st., Robey st. to Lincoln st.	3	" "
Wood st., Hubbard st. to Lake st.	14	" "
Hubbard st., Wood st. to Lincoln st.	3	" "
Carrol st., Halsted st. to Desplaines st.	5	" "
Throop st., from Van Buren st. to Jackson st.	3	Assessment made.
Washington st., from Wood st. to Lincoln st.	4	Lamps erected.
West Water st., from Kinzie st. to Indiana st.	7	Lamps erected.
Adams st., from 347 ft. West of Throop to Laflin st.	7	No pipe laid.

NORTH DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
Oak st., Green Bay st. to Lake Michigan.	3	Lamps erected.
North Dearborn st., Maple st. to Division st.	4	Three lamps erected.
Carr st., Superior st. to Hinsdale st.	5	Assessment made.

In conclusion, we invite your attention to the financial statement at the close of the report, exhibiting the expenditures of the Board in detail, and to the accompanying report of the City Engineer.

Respectfully submitted,

J. G. GINDELE,
FRED. LETZ,
O. J. ROSE,
} *Board of Public Works.*

REPORT OF CITY ENGINEER.

CHICAGO, April 1st, 1865.

To the Board of Public Works:—

GENTLEMEN:—In respectfully presenting this, his fourth annual report, the City Engineer would follow the usual order in mentioning the different works the Board have placed under his charge:—

WATER WORKS.

These have, in their different branches, received unusual attention and, in some instances, caused unusual anxiety during the past year. Their general condition is constantly improving, but, in some cases, renewals and enlargements will be necessary very soon in consequence of the rapid growth of the city, the decay of materials, and accretions on the Lake Shore. These will be particularly described under the heads of Pumping Works, Inlet Basin, and Main Pipes.

PUMPING WORKS.

These, including their performances during the past year, their present condition, and future requirements, will be found fully described in the following report of the engineer in charge of them:—

REPORT OF ENGINEER OF PUMPING WORKS.

PUMPING DEPARTMENT,
CHICAGO, April 1st, 1865.

E. S. Chesbrough, Esq., City Engineer:—

SIR:—I have the honor to submit the following report of the operations of this department for the year ending March 31st:

The quantity of water pumped during the past year amounts to 2,523,339,220 gallons; exceeding the quantity pumped last year over 187,000,000 gallons.

Of the whole quantity, the Gallons.

Large engine pumped ---------- 1,481,044,080

Small do do. ---------- 1,042,295,140

Being an average daily quantity of ---------- 6,913,258

The engines have been in operation a portion of every day throughout the year.

The large engine has been in use 206 days, an average of $16\frac{21}{60}$ hours per day.

The small engine has been run 159 days, an average of $18\frac{52}{60}$ hours per day.

The total actual running time being $6370\frac{3}{60}$ hours.

		Tons.
The whole amount of coal received during the past year was ----------		$3505\frac{1475}{2000}$
Amount on hand April 1st, 1864, ----------		$759\frac{1030}{2000}$
Of this am't there has been used for pump'g,	$3149\frac{215}{2000}$	
do do. for keeping steam when stopped,	$117\frac{1800}{2000}$	
For pipe laying, workshop, stoves, etc.,------	$119\frac{1640}{2000}$	
On hand April 1st, 1865, ----------	$795\frac{570}{2000}$	
Apparent shrinkage, ----------	$83\frac{280}{2000}$	
	$4265\frac{505}{2000}$	$4265\frac{505}{2000}$

The following record will exhibit the aggregate operations of engines and boilers each month during the past year:—

MONTHS.	Average Gallons Water pumped per day.	Total Gallons Water pumped per month.	Average lbs. of Coal consumed per day.	Total lbs. of Coal consumed per month.
April, 1864, --	5,933,772	178,013,170	15,690	470,710
May, " --	6,499,071	201,471,216	17,259	535,020
June, " --	7,693,819	230,814,576	18,995	569,850
July, " --	7,200,894	223,227,723	17,057	528,775
August, " --	8,293,850	257,109,360	22,124	685,850
Sept. " --	7,904,568	237,137,038	20,976	629,285
October, " --	6,178,971	191,542,516	15,739	487,915
Nov. " --	5,501,101	165,033,042	16,012	480,385
Dec. " --	6,711,128	208,044,966	17,988	557,640
Jan'y, 1865, --	7,488,116	232,131,600	19,924	617,640
Feb'ary, " --	6,758,741	189,244,751	16,514	462,390
March, " --	6,760,299	209,569,260	16,405	508,555

TABLE SHOWING THE QUANTITY OF WATER PUMPED EACH MONTH,

From January 1st, 1858, to March 1st, 1865.

MONTHS.	1858.	1859.	1860.
January,	81,538,179	106,905,665	132,284,454
February,	69,426,515	106,401,412	130,800,720
March,	82,677,463	102,415,983	150,331,680
April,	82,600,782	89,994,235	132,930,546
May,	82,279,920	116,007,263	141,171,078
June,	90,211,505	113,098,416	148,197,024
July,	101,670,736	133,800,336	166,394,640
August,	107,176,652	123,266,556	152,427,690
September,	108,534,540	131,735,847	132,272,202
October,	101,046,605	141,527,040	148,710,195
November,	86,385,840	127,342,018	150,493,248
December,	98,316,722	122,653,139	130,773,075
TOTAL,	1,091,865,457	1,415,147,910	1,716,786,552

MONTHS.	1861.	1862.	1863.
January,	137,651,918	151,971,047	169,900,255
February,	142,071,067	168,931,783	158,108,450
March,	135,576,447	192,937,942	159,930,404
April,	128,371,178	170,081,570	
May,	150,489,168	181,483,032	Hereafter the year commences on the first day of April.
June,	155,996,352	199,113,518	
July,	147,182,793	209,215,872	
August,	168,602,494	195,588,295	
September,	152,710,186	186,902,888	
October,	149,362,166	199,045,045	
November,	153,879,648	187,002,720	
December,	145,261,272	175,006,027	
TOTAL,	1,767,154,689	2,217,279,739	487,939,109

MONTHS.	1863–4.	1864–5.
April,	173,519,952	178,013,170
May,	193,119,348	201,471,216
June,	194,255,701	230,814,576
July,	209,332,677	223,227,723
August,	217,561,920	257,109,360
September,	217,229,652	237,137,038
October,	185,678,001	191,542,516
November,	176,132,600	165,033,042
December,	199,592,696	208,044,966
January,	209,884,992	232,131,600
February,	176,088,647	189,244,751
March,	183,712,268	209,569,260
TOTAL,	2,336,108,454	2,523,339,218

THE AVERAGE DAILY QUANTITY PUMPED FOR THE ABOVE YEARS, WAS:—

1858,	2,991,412	galls.
1859,	3,877,118	"
1860,	4,703,525	"
1861,	4,841,547	"
1862,	6,074,739	"
1863–4,	6,382,810	"
1864–5,	6,913,258	"

The following tables exhibit in detail the operations of engines, pumps, and boilers, during the year just closed:—

MONTHS.	No. of days run.	No. of hours and Minutes run.	Ave. No. of hours run per day.	Ave. galls of water pumped per day.	Total galls water pumped per month	Pounds Coal consumed for pump'g.	Pounds Coal consumed when at rest.	Total Coal used per month.	Total Revolutions per month.
1864.		H. M.	H. M.	LARGE	ENGINE.				
April,	11	148 15	13 28	5,742,637	63,169,008	169,275	8,800	178,075	77,413
May,	31	466 06	15 02	6,499,071	201,471,216	507,120	27,900	535,020	246,901
June,	30	517 50	17 15	7,693,819	230,814,576	545,650	24,200	569,850	282,861
July,	6	98 33	16 25	6,855,080	41,130,480	105,230	3,200	108,430	50,405
August,	31	587 48	18 57	8,293,850	257,109,360	669,750	16,100	685,850	315,085
September,	19	332 54	17 31	8,347,207	158,596,944	400,060	10,000	410,060	194,359
November,	19	269 25	14 11	5,490,005	104,310,096	301,315	17,700	319,015	127,831
December,	28	445 27	15 54	6,868,243	192,310,800	489,935	28,400	518,335	235,675
January, 1865,	31	503 06	16 13	7,488,116	232,131,600	589,840	27,800	617,640	284,475
Totals,	206	3,369 13	16 21	7,189,534	1,481,044,080	3,778,175	164,100	3,942,275	1,815,005
1864.				SMALL	ENGINE.				
April,	19	341 22	17 58	6,044,429	114,844,162	282,435	10,200	292,635	221,365
July,	25	518 44	20 45	7,283,889	182,097,243	412,345	8,000	420,345	350,997
September,	11	217 40	19 48	7,140,008	78,540,094	212,725	6,500	219,225	151,388
October,	31	564 20	18 48	6,178,791	191,542,516	472,015	15,900	487,915	369,203
November,	11	185 44	16 53	5,520,267	60,722,946	155,470	5,900	161,370	117,045
December,	3	48 15	16 05	5,244,722	15,734,166	38,305	1,000	39,305	30,328
February, 1865	28	537 58	19 13	6,758,743	189,244,752	450,990	11,400	462,390	364,774
March,	31	586 40	18 55	6,760,299	209,569,261	495,755	12,800	508,555	403,950
Totals,	159	3,000 50	18 52	6,555,641	1,042,295,140	2,520,040	71,700	2,591,740	2,009,050

RECAPITULATION.

ENGINES.	No. of Days run.	No. of hours and Minutes.	Total galls. water pumped.	Pounds of Coal consumed for pump'g.	Pounds of Coal consumed when not running.	Total pounds of Coal used.	Total No. of Revolutions.
		H. M.					
Large,	206	3,369 13	1,481,044,080	3,778,175	164,100	3,942,275	1,815,005
Small,	159	3,000 50	1,042,295,140	2,520,040	71,700	2,591,740	2,009,050
Total,	365	6,370 03	2,523,339,220	6,298,215	235,800	6,534,015	3,824,055

The expenses properly due to pumping, during the year, were as follows:—

Salaries of Engineers, Firemen, and others,	$7,266.48
$3293\frac{1015}{2000}$ tons of coal, at an average of $9.94 per ton,	32,737.47
$233\frac{1}{2}$ gallons of oil,	351.96
1098 pounds tallow,	170.53
Packing, waste, etc., etc.,	347.07
Gas for lighting Works,	137.19
Repairs to machinery,	984.65
Total,	$41,995.35
Cost of delivering water, per million gallons,	$16.64

This shows the cost of pumping water during the past year to be about 42 per cent more than the previous year. However, even this excess may be regarded as a favorable record, as the principal material entering into the operation of pumping the past year cost an average of over 53 per cent more than like material during the year referred to. It is proper to add that a portion of the coal used during the past year was of an inferior quality.

THE WORKSHOP

May now be regarded as a permanency, since the convenience and profit accruing from it has become an important auxiliary in connection with the various departments under control of the Commissioners.

During the past year 157 new fire hydrants, of the peculiar style adopted by the city, have been manufactured, besides a number of old ones repaired. 102 new stop-valves have been made, of various sizes, viz.:—

52 four-inch,	13 eight-inch,
34 six-inch,	3 twelve-inch.

In addition to the above work, a large amount of repairing has been done for bridges and other city departments.

The total expenditures for labor and material in the foregoing work, is	$10,039.76	
Add for interest, depreciation, etc.,	324.00	
Value of work turned out, based on current prices for like articles,		13,554.52
Leaving a balance, as earnings for the year,	3,190.76	
	$13,554.52	$13,554.52

There are remaining on hand, 11 new fire hydrants, 12 new 4-inch stop-valves, 17 new 6-inch stop-valves, and 1 new 12-inch stop-valve.

The value of these, including the raw material on hand, amounts to	$1,840.74
Value of shop tools, patterns, etc.,	1,800.00
Total,	$3,640.74

Old iron, consisting of broken pipe, cocks, and hydrants, has been sold during the year, amounting to $335.28, which sum should be deducted from the cost of like new work, as above.

The property at the pumping works is the same as at the last report, except old steam piston and rod, formerly belonging to large engine. The value of stores, viz., oil, tallow, waste, packing, &c., remaining on hand, from those purchased the past year, amounts to $141.50.

PUMPING WELL, INLET BASIN, ETC.

On the 17th of February last, the water was shut off from the city a few hours, for the purpose of cleaning the pump well. During the time, the reservoirs were kept full, and the usual precautions taken to provide a full supply, in the event of fire occurring.

During the cold weather of last winter, great quantities of "field ice" formed upon the surface of the lake, and, owing to the prevalence of high winds, it was driven towards the West shore, forming one vast "icepack," several feet above the sur-

face of the lake, and extending miles along the shore. This accumulation of ice entirely excluded the water from the "inlet basin," and, for a time, threatened the supply to the city. Measures were immediately taken to cut a channel through the "pack" (which required several hours labor to accomplish), which was afterwards kept open. The usual quantities of small fish also appeared during the winter, but by diligent watching, day and night, serious annoyance was prevented.

With these exceptions, and the escape of the buildings of the pumping works from damage by the fire which destroyed Lill & Diversey's brewery, in June last, nothing has occurred during the year tending to interrupt the supply. The engines and boilers are in fair condition.

During the year the large engine was fitted with a new steam piston and rod. The small engine has received no repairs of importance. Some slight expenditures have also been made upon the boiler.

In order to render the condition of the engines entirely satisfactory, it will be necessary to make further repairs. However, they will be deferred, if possible, until the proposed additional engine can be completed. This will afford ample facilities for doing work which we do not now possess.

NEW ENGINE.

In my last annual report, I had the honor to briefly allude to the necessity which seemed to exist for additional pumping machinery; also to the steps which had been taken in the matter. Further consideration has been given the matter during the past year.

A general plan for the engine and pumps has been prepared and submitted to a number of distinguished engineers, here and elsewhere, each of whom has expressed favorable opinions, with reference to the simplicity, efficiency, and general practicability of the design. The plan contemplated a capacity to deliver 1,000,000 gallons of water per hour, or 24,000,000 daily. This quantity was deemed unnecessarily large at this time, and in consideration of a saving of over $20,000 in the first cost, the

proportions were subsequently reduced to a capacity of 18,000,000 gallons per day, on the same general plan.

The style of the engine proposed, may be termed a condensing coupled-beam engine, with direct double acting pumps, capable of delivering the quantity of water alluded to above, under a head of 125 feet in 24 hours. For this purpose, the design embraces two steam cylinders, each 44 inches in diameter, and adapted to 8 feet stroke of piston. Two double acting pumps, each 28 inches in diameter, with stroke same as steam cylinders, are placed in a vertical position, directly below the steam cylinders, at a point entirely below the surface of the water in pump wells. The steam piston rods extend through bottom of cylinders and top of pumps, connecting to water pistons, thus forming a continuous rod from its connection with the working beams to pistons of pump. The cylinders, pumps, and other parts are firmly secured to massive plates, which are fastened to the foundation. The receiving and delivery valves of the main pumps, are of the kind known as Cornish valves. The action of this style of valve, under heavy pressure, is generally regarded among hydraulic engineers as possessing peculiar advantages. They are generally arranged with two beats. Those for the large pumping engine at Cincinnati have three beats. Those intended for the engine under consideration, were designed by Mr. Edward Faron, of New York City, and are provided with four differential beats. The working beams are of cast-iron, 18 feet long, resting upon entablatures supported by eight Tuscan columns. The connecting rods are of wrought-iron, extending from the beams to the cranks, which are set at right angles with each other, upon a wrought-iron shaft which drives a fly-wheel, 24 feet in diameter, arranged with a heavy rim and eight skeleton arms. The air-pumps and condensers are located below the main floor of the building, upon bed-plates. The former are operated by the working beams; the latter form a support for the pedestals and columns. The engine is fitted with Winter's patent adjustable rotary cut-offs, of the most approved construction.

Such is a brief outline of the principal parts of the proposed engine, which is intended to be, and as here described is, nominally, one engine, although it will be found, by referring to the detailed specifications, that the various parts are so arranged that it may, in fact, be rendered two independent engines.

Some theoretical advantage might be gained, had the desired capacity been represented by one steam cylinder and one pump (a single engine). However there are circumstances, peculiar to our works, which should be considered in this connection. It is unnecessary to detail them here, but I am of the opinion that, when fairly viewed, the practical advantages of the combination proposed will outweigh those claimed for the single engine. One additional boiler only will be required, as it will be used in connection with those now in use. The general dimensions of the boiler have been determined, but its exact form and arrangement will be governed somewhat by the location.

The *duty* developed by the engine will, in a great measure, depend upon the efficiency of the boiler. It is important, therefore, that it should embrace, in its construction, such reliable improvements as aim at practical economy—especially such as tend to a thorough combustion of fuel—and thus prevent the escape of the usual volumes of smoke, resulting from the use of bituminous coal. Independent of the economy claimed in this particular, the prevention of smoke itself would be a desirable feature, and a step towards abating an increasing annoyance.

The limited dimensions, as well as the dilapidated condition of the buildings of the pumping works, render it necessary to provide an additional location for the proposed new machinery, This is a matter of the highest importance, and a perplexing question to decide. Yet, in view of the exigency which exists for the new engine, it is one demanding prompt and careful consideration. The limits of this report will not admit of reference in detail, to the plans which have been suggested to meet this requirement, but the essential points governing the adop-

tion, and the difficulties attending the execution of them, may be briefly alluded to.

The first expedient which naturally presents itself for the purpose, is to extend the present engine foundation, and enlarge the buildings sufficiently to accommodate the new engine.

To construct foundations for the new engine, will require excavations to a depth of 25 to 30 feet below the surface in order to form a proper pump well, and those who are familiar with the peculiar character of the soil in this locality, will fully comprehend the character of the work to be done. But when, in addition to the natural difficulties incident to building in quicksand, we consider the excavations referred to must be made within a few feet of three brick towers, from 80 to 140 feet high, resting upon sand near the surface, and that an accident to either of them, or damage to the walls of the present building, would, in all probability, deprive the city of water for some time, the work becomes too critical to be attempted in an ordinary way. It is presumed no argument is needed to demonstrate the importance of guarding against a contingency of the kind, nor of the evil consequences which might follow such an event. It is obvious then, that whatever plan may be adopted for providing the new foundation, &c., the efficiency of the present pumping works becomes a matter paramount to all others. Any proposition, therefore, which includes a probability of risk to the supply of water, may be entirely dismissed from consideration.

It is believed, however, notwithstanding the obstacles which present themselves, that with extraordinary precautions the proper foundation can be constructed and most of the risk alleged above avoided by building a curb of proper form and dimensions for the pump well upon the surface, and by excavating within the walls, sink it to the depth required. The towers, walls, &c., alluded to would be secured against damage and if deemed feasible will probably be found to incur less expense than any other plan yet suggested.

Another plan proposed, and one which would eventually

prove the most satisfactory, is that of constructing foundations and pump wells, and erecting buildings, upon a new site, entirely independent of, and about 200 feet east of, those now in use.

This proposition would probably incur greater expense than the other, but would be less likely to interfere with the operations of the present works, than any other which could be carried out on the same plat of ground. This plan would provide foundations and buildings sufficient to accommodate all the pumping machinery, including the engine under consideration, the two now in use, and room for still another, when required. The design would be, first, to erect the proposed new engine, to supply the city with water, which would afford opportunities to remove the old engines to the new site. This done, the old building, being of no further use, could be razed, and the space tastefully graded, presenting a park 200 feet square.

If this proposition should be favorably entertained, and the new works constructed in a substantial manner, liberal in proportions, and with a degree of beauty which characterizes structures of the kind everywhere, containing, as they would, pumping machinery capable of supplying 40,000,000 gallons of water daily, also the "shore shaft" of the Lake Tunnel, they would be justly entitled to a location in the heart of the metropolis of the Great West, and an enduring evidence of the wealth, taste, and energy of her citizens. Besides, past experience clearly establishes the fact, that the extension of the pumping works, now deemed essential, should be of sufficient magnitude to provide for the future growth of our city, whether rebuilt upon the present or upon a new site. That the question should be decided at an early day, cannot be too strongly urged.

Respectfully,

DEWITT C. CREGIER, *Engineer.*

For reasons given in previous reports, the engine planned by Mr. Cregier, and so satisfactory to the most competent judges, should be constructed without delay. The average daily con-

sumption for the past year was 530,448 gallons more than that of the year previous. There is no probability that this rate of increase will be diminished, but there is a possibility that it will be greater, especially if new manufacturing establishments should spring up in our city.

In consequence of other questions connected with the public works of the city requiring immediate attention, there has not been time yet to elaborate fully the necessary plans for the connections between the New Engine and the Lake Tunnel and the Inlet Basin, but it is hoped there will be an opportunity before long to take them up. In the meantime, it would be advisable to secure the construction of the new engine before next winter.

INLET BASIN.

This was found to be filling up so rapidly as to make it necessary to dredge out a considerable portion of it last season. The depth of water in the lake had become so small as to prevent the dredge from getting to the basin until it cut a channel. Had this dredging not been done, which was looked upon at the time more as a prudent precaution than as an absolute necessity, there is every reason to believe that serious inconvenience might have resulted several times the past winter, in consequence of the unusually low average stage of water and the occasional prevalence of very strong southerly winds.

In addition to the low water, another, and, in the experience of the water works, entirely new trouble occurred. It was the formation of an ice ridge nearly parallel with the shore, and about 200 feet outside of the inlet basin, cutting off the latter so effectually from its connection with the lake as to make it necessary to stop the pumps for want of water. This was a source of much anxiety, and as Mr. Cregier mentions, required at times watchful care, and much labor night and day to prevent the supply to the city from being cut off.

In view of the foregoing experience it is recommended that the breakwater of the inlet basin be extended out on the north side at least 600 feet during the present season, and then such

further dredging for the entrance to the basin to be done as may be found necessary.

MAIN PIPES.

During the past year, the new main 24 inches in diameter, on Wabash avenue, between Adams and Twenty-second streets, was laid, and connections made between it and the distributing pipes on Hubbard court, Twelfth street, and Twenty-second street. Previous to the completion of this work complaints of the scarcity of water, in the South Division, south of Adams street, were very frequent and annoying, but immediately after they ceased entirely. Notwithstanding this great improvement, however, it must be confessed that Chicago is far behind the principal cities of the country in the proportion of its large main to its distributing pipes. So far as the supply for domestic and manufacturing purposes is concerned, there is now but little or no just cause of complaint; but with regard to the speedy extinguishment of fires, some parts of the city are much more exposed than others. This could not be wholly prevented in a city growing so rapidly, and, in some sections so sparsely built upon, as ours, it is of course a question how far the city should make large expenditures on this account, but being an eminently practical question, it is well worthy of the consideration of the Board.

DISTRIBUTING PIPES.

There were laid, during the year ending March 31st, 1865, the following main and distributing pipes, viz.:

SOUTH DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in inches.	Length in feet.
Hardin place	Cottage Grove avenue and Prairie avenue	4	1,478
Prairie avenue	Hardin place and Twenty-fifth	6	2,000
Prairie avenue	Twenty-fifth and northward	4	229
Twenty-Sixth	Prairie avenue and Calumet avenue	4	426
Twenty-First	State and east of Wabash avenue	4	712
Purple	Archer road and Elgin	6	134
Elgin	Purple and Stewart avenue	4	1,075
Wabash avenue	Adams and Twenty-second	24	9,817
Fourteenth	Wabash avenue and westward	6	55
Sixteenth	Wabash avenue and eastward and west'd	8	160

SOUTH DIVISION, continued.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in inches.	Length in feet.
Twelfth	Wabash avenue and eastward	8	60
Twelfth	Wabash avenue and westward	12	90
Archer road	Grove and Stewart avenue	8	1,294
Stewart avenue	Archer road and north of Twenty-first	8	857
Twenty-First	Clark and Stewart avenue	8	1,874
Purple	Twenty-first and southward	6	50
Grove	Todd and southward	4	329
Broad	Archer rd. and south'd to Wahl's factory	4	1,362
Deering	Archer road and Cologne	6	1,260
Deering	Cologne and north'd to Hancock's pkg. h.	4	135
Arnold	Archer road and Twenty-second	4	658
Calumet avenue	Twenty-first and Twenty-second	4	506
Eighteenth	Clark and Arnold	4	250
Fourteenth	Wabash avenue and State	8	535
Archer road	Main and Pitney	6	2,883
Eighteenth	Prairie avenue and eastward	4	354
	Hydrants	4	352
			28,935

WEST DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter tn inches.	Length in feet.
Carroll	Paulina and Wood	4	740
Desplaines	Lake and northward	6	106
Jackson	Morgan and Aberdeen	6	730
Union	Lake and north and south	6	150
Madison	Throop and Reuben	8	2,057
Foster	Harrison and northward	4	562
Harrison	Desplaines and Blue Island avenue	4	946
DeKoven	Clinton and Jefferson	4	407
Fulton	Ann and Elizabeth	4	629
Morgan	Polk and Twelfth	8	1,669
Twelfth	Halsted and Blue Island avenue	8	1,729
Waller	Twelfth and southward	6	60
Sampson	Rucker and Loomis	4	1,402
Rucker	Twelfth and Mitchell	6	1,327
Brown	Twelfth and southward	4	314
Milwaukee avenue	Augusta and Cornell	6	1,033
Wabansia avenue	The River and Elston road	6	1,326
Elston road	Wabansia avenue and northward	6	696
Jefferson	Lake and northward	4	138
Mitchell	Rucker and Lincoln	6	4,759
Lincoln	Mitchell and C. B. & Q. R. R.	6	1,115
Washington	Hoyne and Western avenue	4	2,000
Western avenue	Washington and northward	4	234
Paulina	Chicago avenue and Clarinda	4	480
Chicago avenue	Reuben and Paulina	6	666
	Amount carried forward		25,275

WEST DIVISION, continued.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in inches.	Length in feet.
	Amount brought forward		25,275
Taylor	Blue Island avenue and Newberry	6	785
Jefferson	Wright and southward	6	185
Aberdeen	Monroe and Madison	4	476
Robey	Walnut and northward	6	173
Park avenue	Lincoln and westward	4	241
Park avenue	Reuben and westward	4	281
Leavitt	Warren and north of Washington	6	554
May	Madison and Washington	6	505
O'Brien	Jefferson and Halsted	4	1,303
Halsted	Catharine and south of Canal Port avenue	6	2,703
Canal Port avenue	Halsted and east and west	6	85
Canal	Twelfth and Taylor	6	935
McHenry	Wabansia and Rawson	4	520
Rawson	McHenry and eastward	4	623
	Hydrants	4	624
	Total		35,268

NORTH DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in inches.	Length in feet.
Halsted	Willow and northward	6	829
Larrabee	Willow and Centre	6	1,485
Robert	Chicago avenue and southward	4	270
Little Fort road	Sedgwick and Wisconsin	4	948
Elm	Extension eastward of Green Bay	4	161
Geary	Hinsdale and White	4	316
Green Bay road	Cane and City Limits	4	1,107
Pearson	Market and westward	4	234
Mohawk	Clybourn avenue and Blackhawk	4	1,461
Loewe	Wells and westward	4	554
Oak	Wells and Lasalle	4	410
Elm	Franklin and Wells	4	428
	Hydrants	4	70
	Total		8,271

The total length of pipe laid in the whole city during the year, was 13 miles and 3,834 feet.

The total length of pipes of different sizes, in the city, as near as can be ascertained, is as follows, viz.:—

24	inch	cast	iron	main	pipe,	22,082	feet.
16	"	"	"	"	"	10,610	"
12	"	"	"	"	"	9,830	"
30	"	wrought	iron	river	pipe, State street,	280	"
24	"	"	"	"	Chicago avenue,	236	"
24	"	"	"	"	Rush street,	530	"
12	"	"	"	"	Adams street,	176	"
12	"	cast	iron	distributing	pipe,	454	"
10	"	"	"	"	"	7,862	"
9	"	wrought	"	and siphon pipe, on Archer road,		90	"
8	"	cast	iron	distributing	pipe,	57,553	"
6	"	"	"	"	"	226,314	"
4	"	"	"	"	"	328,770	"
3	"	"	"	"	"	30,388	"
						695,175	feet,

or 131 miles and 3495 feet.

HYDRANTS.

During the year, the following new hydrants have been put in, viz.:—

SOUTH DIVISION.

1 East side Wells at the river.
1 " Lasalle between Washington and Madison, Eng. Ho.
1 " Purple opposite end of Elgin.
1 S. W. corner Archer road and Main.
1 South side Archer road opposite end of Bonfield.
1 " " " " " Church place.
1 S. W. corner " " and Broad.
1 North side Twenty-first between Purple and Stewart avenue.
1 West " Stewart avenue opposite end of Twenty-first.
1 S. W. corner Hickory and Deering.
1 West side Benson near Wahl's glue factory.
1 N. W. corner Calumet avenue and Twenty-ninth.

1 West side Prairie avenue bet. Twenty-sixth and Twenty-ninth
1 North side Archer road opposite end of Hanover.

WEST DIVISION.

1 East side Jefferson, between Washington and Madison.
1 N. W. corner Lake and Desplaines.
1 North side Lake, between Clinton and Jefferson, Engine Ho.
1 N. E. corner Madison and Loomis.
1 N. E. " Milwaukee avenue and Fourth.
1 N. W. " Mitchell and Throop.
1 N. W. " Mitchell and Laflin.
1 N. W. " Sampson and Throop.
1 N. W. " Sampson and Loomis.
1 West side Halsted op. end of Eighteenth.
1 N. W. corner Clinton and Twelfth.
1 N. W. " Morgan and Twelfth.
1 N. W. " Morgan and Eleventh.
1 N. W. " Rucker and Coolidge.
1 N. W. " Loomis and Mitchell.
1 N. W. " Rucker and Mitchell.
1 N. W. " Canal and DeKoven.
1 North side Harrison bet. Blue Island avenue and Desplaines.
1 N. W. corner Twelfth and Johnson.
1 West side Western avenue bet. Washington and Union Park.
1 N. W. corner Chicago avenue and Paulina.
1 N. W. " Paulina and Clarinda.
1 North side Taylor between Blue Island avenue and Halsted.
1 S. W. corner Canal Port avenue and Halsted.
1 N. W. " Union and Sixteenth.
1 N. W. corner Washington and Hoyne.
1 N. E. " " " Western avenue.
1 North side Milwaukee avenue opposite end of Cornelia.
1 " " " " " Augusta.
1 N. W. corner Wabansia " and Elston road.
1 North side " " opposite end of McHenry.
1 West side Elston road north of Wabansia avenue.
1 N. W. corner Fulton and Elizabeth.

1 North side Madison opposite end of Laflin.
1 N. W. corner Canal Port avenue and Jefferson.

NORTH DIVISION.

1 West side Milwaukee avenue near Nicholson's distillery.
1 S. W. corner Green Bay road and Fullerton avenue.
1 N. W. " Mowhawk and Blackhawk.
1 West side Dearborn between Huron and Superior.
1 N. E. corner Little Fort road and Centre.
1 N. W. " Larrabee and Centre.
1 West side " between Centre and Willow.
1 " Halsted " " " "
1 " Kingsbury opposite end of Illinois.

In all 58, making the total number in and belonging to the city, April 1st, 606.

90 hydrants were taken out and renewed; 12 received more or less repairs. All of the new hydrants are of the Cregier patent, which continue to give the satisfaction they promised: as they saved the shutting off of water from important districts quite often during the year,—which shutting off could not have been avoided with the old form of hydrant, especially in the case of stones or chips getting caught in the valves.

The work of connecting the hydrants with the sewers has been continued; over 160 in all being thus connected. Of 557 cases of hydrants being frozen and thawed out last winter, only four occurred with hydrants connected with the sewers, and in those cases the drains were evidently obstructed; thus showing that the warm air from the sewers is sufficient to keep the hydrants from freezing, if it can be tolerably well confined around them.

STOP COCKS.

The following stop cocks have been put in during the year, viz.:

SOUTH DIVISION.

1 4 in., Couch place between Lasalle and Wells.
1 4 in., " " " Wells and Franklin.
1 4 in., " " " Franklin and Market.

1 4 in., Third avenue bet. Jackson and Van Buren:
1 4 in., Twenty-first east side of State.
1 6 in., Archer road west side of Main.
1 8 in., Stewart avenue south side of Twenty-second.
1 8 in., Fourteenth west side of Wabash avenue.
1 8 in., Fourteenth east side of " "
1 8 in., Twenty-second west side of "
1 8 in., " east " "
1 8 in., Twelfth " " "
1 12 in., " west " "
1 8 in., Hubbard court " " "
1 8 in., " " east " "
1 8 in., Sixteenth west " "
1 8 in., " east " "
1 8 in., Ontario west " Wells.
1 24 in., Wabash avenue south " Adams.

WEST DIVISION.

1 4 in., Fulton west side of Elizabeth.
1 4 in., Brown south " Twelfth.
1 4 in., Sampson west " Rucker.
1 6 in., Rucker north " Kinzie.
1 6 in., Waller south " Twelfth.
1 6 in., Mitchell west " Rucker.
1 6 in., Halsted south " North.
1 6 in., Canal Port avenue west side of Halsted.
1 6 in., Mitchell west side of Lincoln.
1 8 in., Twelfth " " Halsted.
1 4 in., Chicago avenue west side of Reuben.
1 4 in., Leavitt north side of Madison.

NORTH DIVISION.

1 4 in., Elm west side of Wells.
1 6 in., Larrabee north side of Centre.
1 8 in., Ontario west " Wells.

In all 34, making, together with those previously put in, 332 in the city. The balance of the stop cocks reported by Mr.

Cregier as made at the shop were used either for renewing old ones or for water meters.

THE WORKSHOP.

In addition to what Mr. Cregier has said, it may be stated the workshop has undoubtedly been of very important advantage, in the extension and repairs of the main and distributing pipes, during the past year.

RESERVOIRS.

These are internally, in about as good a condition as they were in a year ago.

Externally the west reservoir has been much improved in being surrounded by a neat and substantial iron fence, and by grading up the surface of the lot.

QUALITY OF THE WATER.

This has been occasionally very bad during the year, but no worse than it has been at times for several years past. No permanent relief is expected before the completion of

THE LAKE TUNNEL.

This work has reached from the land shaft a distance of 2,125 feet. The character of the ground has continued to be about the same, and the average rate of progress for weeks at a time has been 12 feet a day. Occasional interruptions from the breakage of machinery, strikes among the workman, the meeting with and occasional explosion of gas, and other causes have prevented this average rate all the time; and have reduced it for the year to $9\frac{1}{10}$ feet a day.

The discussions mentioned in the last annual report, relative to the size of the tunnel resulted in keeping it the same as mentioned in the contract, that is 5 feet wide and 5 feet 2 inches high, the top and bottom being semicircular.

The back filling between the regular brick work and the irregular surface of the excavation, which was to have been of well packed earth, has been made of masonary, because it was

found very difficult to get the puddled clay used faithfully packed into the spaces. Ordinarily the ground is so good that an average of one inch of cement mortar between the bricks and the natural clay is all that is required.

A tendency in the clay to swell was very early discovered and for a time some possible trouble from this source was feared, but thus far the masonry has resisted all tendency to yield, so that all apprehensions of this kind for the first finished portions of the tunnel have ceased.

This tendency in the clay to swell has made it very troublesome to preserve the grade of the tunnel with great accuracy, because the amount of swelling has been so different, in different parts of the work. The small size of the tunnel together with the great difficulty of getting a clear atmosphere in it has made the alignment of it very troublesome; but Mr. Clarke who has taken charge of the alignment has met with very satisfactory success.

In order to facilitate the work of the tunnel, chambers and turn-tables are placed once in a thousand feet. In these chambers materials are stored and cement is mixed. They also afford passing places for the cars, so that the work is carried on at a greater average rate now than at first, not because it is any easier, but because the contractors and their men have had more experience.

The outer crib, notwithstanding the expectations expressed a year ago, has not yet been launched, but is very nearly ready and there is every reason to believe it will be put in its place during the favorable weather that may be expected the approaching season.*

* At the date of going to press, August 25, the excavation of the Tunnel from the land shaft, has reached a distance of 3,505 feet. The masonry is about 25 feet back of this. An average rate of 14 feet a day has been made occasionally for a week at a time.

The use of iron instead of wooden rails, and of small mules instead of men for drawing the cars, has caused greater economy as well as speed.

SEWERAGE.

The report of the principal assistant, on the sewerage of the city, will be found immediately below, and presents all the information needed on this subject:—

CHICAGO, March 31, 1865.

To E. S. Chesbrough, Esq., City Engineer:

SIR,—I herewith submit a report of the operations during the past year of the Sewerage Department, of which I have had the charge. The sewers built have been chiefly submains and pipe sewers, for the purpose of filling up the vacancies between the main sewers which had been previously laid. The total length of sewers built during the year, is 25.021 lineal feet, or about 4¾ miles; making, with those previously built a total of $69\frac{2394}{5280}$ miles. The following tables show their distributions in the three districts:—

The ventilation of the first half mile of the tunnel, was effected by drawing the foul air out by a pipe connected with the chimney of the boiler furnace; but towards the last that method became so unreliable as to make something more efficient absolutely necessary. The ventilation is now very satisfactory, and effected by means of an Alden blower.

The crib was launched in a most gratifying manner on the 25th of July, and immediately towed out to its position. The work of sinking it was somewhat delayed in consequence of defective arrangements and accidents to the anchors. Owing to rough weather which occurred just as the crib reached bottom, but was not sufficiently loaded to hold firmly, much anxiety was felt for its safety, but by means of a wrecking pump it was filled nearly full of water, and thus kept very nearly in its true position. After the storm had subsided, the crib was found to have worked about 13 feet north of the correct line, and to have embedded itself thoroughly into the clay on the bottom of the lake. It was thought best not to attempt to raise it again, but to proceed immediately with filling it with stone, as the variation from the exact position intended, could be of no practical importance whatever in the use of the tunnel. The crib now contains upwards of 7,000 tons of stone, and will probably be entirely filled early next week.

A much severer storm than the first one has recently occurred, but it has had no appreciable effect on the crib.

The cylinders on the lake shaft are all here and ready to be taken to their position in the crib.

LENGTH IN FEET OF SEWERS BUILT TO APRIL 1, 1865.

Diameter in feet	SOUTH DISTRICT. Previous to April, 1864.	SOUTH DISTRICT. From April 1, 1864, to Ap'l 1, 1865.	NORTH DISTRICT. Previous to April, 1864.	NORTH DISTRICT. From April 1, 1864 to Ap'l 1, 1865.	WEST DISTRICT. Previous to April, 1864.	WEST DISTRICT. From April 1, 1864, to Ap'l 1, 1865.	Total Feet.
6	1,419		3,895		1,292		6,606
5	1,647		8,507		25,462	793	36,409
4½			2,721		13,557		16,278
4	1,952		5,498		6,541		13,991
3	15,748	453	4,159	1,420	1,613		23,393
2½	22,289	4.767	2,284				29,340
2¼	6,359						6,359
2	20,258	4,658	38,907	3,372	35,007	6,462	108,663
1	68,781	1,034	27,177	1,547	26,620	516	125,675
	138,453	10,912	93,148	6,339	110,092	7,770	366,714
Totals,	149,365		99,487		117,86-		$69\frac{2394}{5280}$ miles.

CATCH BASIN AND MAN HOLES.

	Built from April 1, 1864, to April 1, 1865.			Previously Built.	Total.	Average Cost 1864.
	South Dis.	West Dis.	North Dis.			
Catch Basins,	62	79	48	1496	1684	$54.38
Man Holes,--	76	51	56	2405	2588	

There remain unexecuted contracts which are now being completed for the following sewers, viz.: in the South District, 450 feet of 3 feet sewer, and 1800 feet of 2 feet sewer; and in the West District, 280 feet of 4½ feet sewer, and 4425 feet of 2 feet sewer. The following table gives a resume of the construction and repairs for the year in detail:—

RETURN OF SEWERS BUILT AND REPAIRS OF SEWERS, FOR THE YEAR ENDING APRIL 1, 1865.

LOCALITY.	CONSTRUCTION.						REPAIRS.			
	5 Feet.	3 Feet.	2½ Feet.	2 Feet.	1 Foot.	C. Basins	of Sewers Lin. feet.	of C Basins	M's & Bas. alt.to grade	Covers rep. and reneŵd
SOUTH DISTRICT.	Ft.	Ft.	Ft.	Ft.	Ft.	No.		No.		
Indiana av., from 19th to 16th				1,262						
Wabash av., from 22d to 19th			1,387							
Wabash av., from 19th to 16th				1,270						
Michigan av., from 19th to 16th				1,220						
Michigan av., from 22d to 19th			1,429							
Michigan av., from 22d to 23d			633							
State st., from 22d to 19th			1,318							
14th st., from Michigan to Wabash				487						
16th st., from Michigan to Wabash				419						
18th st., from Indiana av., eastward					50					
Wabash av., north and south of 14th					984					
22d st., from the river to McGlashon		453								
Totals in South District		453	4,767	4,658	1,034	62	58	42	83	222
WEST DISTRICT.										
Sangamon st., from Adams to Madison				935						
Racker st., from Adams to Jackson				489						
Green st., from Madison to Washington				521						
Peoria st., from Adams to Monroe				471						
May st., from Madison to Washington				482						
Morgan from Madison to Washington				425						
St. John's pl., from Fulton to Lake				444						
Elizabeth st., from Fulton to Lake				451						
May st., from Fulton to Lake				440						
Maxwell st. from Canal to Jefferson	793									
Jefferson st., from Maxwell to Mitchell				475						
Halsted st., from 12th to DeKoven				653						
St. John's pl., from Fulton to Carroll				337						
Peck st., from Fulton to Carroll				338						
Green from Washington to Randolph					431					
St. John's pl., from Carroll to North					85					
Totals in West District	793			6,461	516	79		6	59	131
NORTH DISTRICT.										
Huron st., from Clark to Lasalle				434						
Superior st., from Clark to Lasalle				434						
Pearson st., from Market to Franklin				425						
Huron st., from Market to Franklin				408						
Superior st., from Market to Franklin				412						
Pearson st., from Green Bay to Pine				504						
White st., from Market to Townsend				755						
Wolcott st., from Division to Schiller		1,420								
Pearson st., from Wolcott westward					159					
Huron st., from Pine to St. Clair					349					
Huron st., from Lasalle to Wells					382					
Superior st., from Lasalle to Wells					382					
Wolcott st., from White to Whitney					275					
Totals North District	793	1,420		3,372	1,547	48	40	31	44	44
GRAND TOTALS, 25,021 ft.—4 m ls. 3901ft.	793	1,873	4,767	14,491	3,097	189	9	79	186	397
AVERAGE COST PER FEET	6.33	4.92	3.29	2.81	1.85	54,38				

CLEANSING AND REPAIRS.

With the increased extent of the sewerage system, there has been an increase in the amount of work required for cleansing

and repairs, and the cost of this work has been greater than heretofore, from the higher wages prevailing.

It should be borne in mind that a large share of this expense, probably one half, is due to the fact that the greater part of our sewered streets are unpaved, and in consequence much earth is swept into the sewers through the catch basins during rain storms, which requires artificial removal, and, also, the manholes and catch basins being uprotected by pavements are exposed to injury from vehicles and frost. The following table shows the cleansing and repairs for the past year and the cost of the work:—

CLEANSING OF SEWERS AND CATCH BASINS, AND COST OF SAME.

METHODS OF CLEANSING.	South District		West District.		North District		Total	Rate of cost per 100 ft.
	Lin ft. clea'd	Cost.	Lin ft. clea'd	Cost.	Lin ft. clea'd	Cost.	Lin ft. clea'd	
Flushing Sewers with Tank...	42,700	$1262.00			35,800	$983.07	78,500	$ 2.86
Removing deposits from main with scrapers and barrows..	8,400	316.20	34,600	$1067.41	20,400	616.00	63,400	3.15
Cleansing with chain machine	28,300	3234.00	2,600	198.00			30,800	11.14
	No. of		No. of		No. of		No. of	Each.
Cleansed catch-basins.....	450	539.00	640	762.00	370	387.00	1,400	1.15
Totals of Cost.....		$5351.00		$2029.41		$1986.07		$9,364.68

COST OF REPAIRS.

There has been expended during the year for the repairs of sewers and catch basins, and for altering manholes to grade, as follows: in the South District, $1432.39; in the West District, $1,216.09; and in the North District, $683.67; total, $3,332.15.

For renewals and repairs of covers, for man holes and catch basins, there has been expended in the South District, $468.00; in the West District, $479.00; and in the North District, 107.-00; total, $1,072.00; making a total for all repairs of $4,404.-15.

HOUSE DRAINS.

The following tabular statement, shows the number of house drains which have been connected with the public sewers during the past year, all of which, together with a very large number of extensions and alterations of old drains have been inspected, surveyed and platted upon the office maps:—

PERMITS FOR PRIVATE DRAINS ISSUED FROM APRIL 1, 1865.

PART OF THE CITY.	6 inch Drain.	9 inch.	12 inch.	Total in 1864-65	Total previously laid.	Total to Ap'l 1, 1865.
South District,---	274	25	2	299	--------	--------
West District, ---	111	7	1	120	--------	--------
North District,---	86	6		93	--------	--------
Totals, -----	471	38	3	512	3,338	3,850

The following table is deduced from a series of tri-daily observation of the elevation of the water of the lake, giving the highest, lowest, and average height for each month; and also the yearly maxima, minima, and means; extending from January, 1855 to April, 1865. I am indebted to Lieut.-Col. J. D. Graham, U.S. Top. Engineer, for the observations for the year 1855, which have been reduced from his plane of observations to the city datum. The observations subsequent to that year were continued by the late Sewerage Commissioners and by the Board of Public Works, and are thought to be of sufficient value to be preserved in this report, as far as they have been kept up, and that they should be continued in future years.

Which is respectfully submitted.

WILLIAM H. CLARKE,

Prin. Assistant Engineer.

TABLE SHOWING THE ELEVATION OF LAKE MICHIGAN, ABOVE THE CHICAGO DATUM, FROM JANUARY, 1855, TO APRIL, 1865.

	JAN.			FEB.			MARCH.			APRIL.			MAY.			JUNE.			JULY.			AUG.			SEP.			OCT.			NOV.			DEC.			YEARLY.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
1855	1.35	0.15	0.76	...	...	...	1.27	0.50	0.80	1.25	0.35	0.80	2.10	0.85	1.55	2.80	0.55	1.78	2.35	1.15	1.87	1.35	1.55	1.98	3.45	1.65	2.07	2.75	1.40	1.94	3.15	1.10	1.74	2.15	1.40	1.84	3.45	0.15	1.56
1856	2.44	1.53	1.90	1.95	1.11	1.41	1.85	0.86	1.43	2.35	1.20	1.56	3.05	1.06	1.99	2.35	1.55	1.92	2.30	1.35	1.90	2.45	1.53	1.80	2.25	0.55	1.68	2.03	0.53	1.49	2.36	0.42	1.43	2.09	0.59	1.20	3.05	0.42	1.60
1857	1.93	0.60	1.00	1.60	0.85	1.28	...	...	...	2.95	1.35	1.87	2.95	1.85	2.22	3.25	1.65	2.52	3.35	2.61	2.95	3.60	2.51	3.14	3.60	2.60	2.99	4.35	2.75	3.06	3.00	1.65	2.25	3.00	1.30	2.29	4.35	0.60	2.42
1858	3.00	1.55	2.22	2.52	1.40	1.93	2.20	1.33	1.85	3.45	2.20	2.37	3.55	2.42	2.85	3.75	2.76	3.27	4.30	3.11	3.66	4.58	3.55	3.62	4.09	2.25	3.22	3.65	2.46	3.07	4.30	2.33	3.86	3.48	1.95	2.76	4.69	1.33	2.90
1859	3.48	1.31	2.27	2.66	2.18	2.40	2.78	2,18	2.46	4.28	1.90	3,10	4.15	2.40	3.25	4.45	2.25	3.25	4.35	3.40	3.90	3.80	3.30	3.60	4.20	2.50	3.36	4.00	2.60	3.03	3.50	2.30	2.53	3.30	2.10	2.60	4.45	1.31	2.98
1860	2.07	1.30	2.28	3.53	1.50	2,45	3.50	2.10	2.53	3.00	2.20	2.68	3.07	2.46	2.83	3.13	2.67	2.89	3.20	2.60	2.93	3.00	2.45	2.85	3.45	2.46	2.60	2.78	2.30	2.54	3.30	1.80	2.22	2.20	1.30	1.55	3.53	1.30	2.54
1861	2.20	0.90	1.73	2.53	1.20	1.74	2.43	0.95	1.93	2.58	1.86	2.34	3.25	2.88	2.77	3.20	2.70	3.00	3.50	2.60	3.10	4.40	3.10	3.36	3.50	2.80	3.07	3.40	2.20	2.85	3.40	2.10	2.65	2.70	1.70	2.20	4.40	0.90	2.56
1862	2.90	1.70	2.12	2.60	1.60	2.02	3.30	1.60	2.30	3.10	2.10	2.50	3.20	2.30	2.70	3.20	2.60	2.90	3.10	2.50	2.80	3.10	2.50	2.70	3.20	2.20	2.77	3.20	2.00	2.70	3.30	1.40	2.50	2.50	1.20	2.00	3.30	1.20	2.50
1863	3.00	1.40	2 10	2.60	1.00	1.90	3.00	1.00	2.05	2,50	0.80	2.10	3.00	2.00	2.37	2.80	1.90	2.40	3.10	1.90	2.40	3.30	1.60	2.30	3.10	1.50	2.20	2.50	1.20	1.90	2.40	0.70	1.67	2.90	1.00	1.70	3.30	0.70	2.10
1864	2.50	0.30	1.50	2.00	0.50	1.34	2-20	0.90	1.50	2.50	1.40	1.85	2.80	1.70	2.05	2.40	1.70	2 00	2.60	1.60	1.95	2.40	1.40	1.75	2.30	0.80	1.40	1.80	0.80	1.13	1.90	-.80	0.84	1.70	0.00	0.70	2.80	-.80	1.57
1865	1.80	-.40	0.40	1.40	0.30	0.66	2.30	0.10	1.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...

CONDITION OF THE RIVER.

As this received so much attention last year, especially by the commission of Engineers, whose report was made to the City Council, on the 6th of March last, it is here thought sufficient on this subject to refer to that report.

THE HARBOR ENTRANCE.

In consequence of complaints of vessels getting aground in the south channel, a survey was made of that pass into the harbor, and it was found that there was scarcely 12 feet of water in the deepest places on some sections of the channel at ordinary stages of the Lake, which depth was always liable to be reduced by strong southerly winds to 11 feet, or less. Besides this there seemed to be a downward tendency in the general level of the lake. To avoid serious injury to the commercial interests of the city, from a want of sufficient depth in the south channel, dredging across the bar at the light-house had been commenced; but without some structure to preserve the newly dredged channel from filling up again, it was feared that no permanent relief could be obtained in this way.

Five different modes of preserving the entrance to the harbor in such a state as to admit vessels of the largest class navigating the lakes were presented, viz.:—

1st. Dredging.

2d. Extending the south pier, and depending upon the river current to scour out and maintain a channel.

3d. Uniting with the Chicago Dock and Canal Company in extending a pier sufficiently far out, north of the north pier, to prevent accretions in the channel.

4th. Constructing a curved pier out in the lake, of such a form and at such a distance from the Light House, as to cause a sufficient current during the prevalence of northerly winds to scour away the bar that would otherwise obstruct the entrance to the harbor just opposite the opening left.

5th. Extending the north pier.

The first plan would probably have been the cheapest, could there have been any certainty as to a sufficient duration of favorable weather, but this uncertainty was too great to allow the plan to be adopted; for the possibility of having the harbor closed for but small portion of the season of navigation, could not be thought of.

The second plan was not adopted because of the doubt of its effecting the object, at least to a sufficient extent.

The third plan would probably have been effective, at least in protecting the north side of the entrance to the harbor, and could have been carried out at considerably less cost to the city than any other. Had negotiations between the parties interested commenced earlier, a mutually satisfactory arrangement might have been made; but as no time was to be lost, owing to the lateness of the season, and as there seemed to be some objection to uniting with any others in such a work, it was thought best to proceed with it alone. It should be mentioned here too, that by this plan the city could not have hoped to receive back from the National Government, the expenditures it might make on account of the pier.

The fourth plan was not adopted because of its greater estimated cost than the others, and because of some doubt as to the dredging that might be required annually after its completion. It should be said, however, that this plan is similar in principle to those adopted by the Romans for some of the Mediterranean harbors of refuge, as mentioned by Vauban in his memoir on the harbor of Cette, dated August 13, 1681.

The fifth plan was decided upon after much discussion and investigation, because it appeared to be the cheapest that would afford effectual relief for the present, and that would be free from the objections brought against a joint arrangement between the city and private individuals for building a pier several hundred feet north of the north pier.

The plan decided upon was to construct a pin of wood and

stone, of the usual form adopted by the government for Lake Harbors, 400 feet long, 24 feet wide, and 21 feet high, or 6 feet above ordinary water in the Lake, sufficient dredging to be done on the bar to sink the cribs to this depth.

After the plan had been decided upon and the Board had received proposals far doing the work, it was discovered, through the presence of Col. T. J. Cram, U. S. Engineer, and Superintendent of Lake Harbors, that the city had no power to construct any works at the entrance of the harbor without the consent of the national government, and that all plans to be adopted, must first be approved by the War Department. Col. Cram lost no time in examining the plans adopted by the Board, and suggesting such modifications as he thought advisable. The principal modification was that in the direction of the pier extension which the Board had concluded should be east and west; but Col. Cram thought it should be parallel with the most northerly inclined portion of the old pier. He recommended too the early extension of the pier 100 feet further than the Board proposed, and the ultimate extension of 500 feet further, making a total length of new pier of 1,000 feet. Col. Cram's reason's for his recommendations are so forcibly stated in his report to the Government, containing his views on a subject so important to the public, that it is thought best to give that report entire here; a copy of it having been kindly furnished by him for this purpose.

REPORT AND RECOMMENDATION IN REFERENCE TO

CHICAGO HARBOR.

BY COL. T. J. CRAM, A.D.C., LT.-COL. U. S. CORPS ENGINEERS, SUPERINTENDENT LAKE HARBORS.

MADE IN CONFORMITY WITH INSTRUCTIONS FROM THE ENGINEER BUREAU, AUGUST 2D, 1864. INSPECTION AUGUST 22D, 1864.

I. A full history of the U. S. operations at this harbor from the time the artificial pier works were commenced and a full description of the formation, changes, dredging of bars, consequent upon those pier works; and the filling up of the newly

dredged channels, consequent upon the littoral current, if written, would fill a volume with very interesting and instructive matter to the engineer.

It is no purpose of mine however, to touch in this report upon those subjects any farther than is absolutely necessary to explain the present condition of the harbor, and to enable us to suggest what may be done with advantage to preserve and secure a channel sufficiently wide and deep for the passage of vessels carrying on the existing commerce in its connection with this highly important national harbor.

Drawing A. herewith submitted shows the bar across the direct entrance from the lake, such as developed by the soundings taken August 13th and 15th, 1864, under my superintendency.* Pass a horizontal plane through the 12 feet curve, that is at a depth of 12 feet below the *present* surface of the water, and we have above this plane a bar 4800 feet in length and of an average width of 900 feet. The width of this bar directly opposite and across the direct entrance from the lake is 810 feet. Passing our horizontal plane however at a depth of 15 feet we have a greater length and width of bar, as the drawing will show. In order to secure a channel sufficiently wide and to a depth of 13 feet for coming years, we shall have to contend with the bar that lies on the horizontal plane passed through the 15 feet curve, because the general oscillation of the lake is now on the descent and will continue to fall, so that its surface will be two feet lower than at the present time, when according to former experience the general oscillation will be in the ascent. The surface of the lake at Chicago is reported to me by the City Engineer, at the present time, two feet higher than in 1847. The stage of 1847 has been fixed upon by the Board of Public Works, as the plane of reference for the city drainage, water works, &c.

In March, 1851, the longitudinal axis of the bar, lying on the plane of the 12 feet curve, bore from a point near the head

* The surveys were made under the immediate supervision of E. S. Chesbrough, Esq., City Engineer.

Marine
Hospital
of
Chicago
River
Basin
Basin
U.S.
Proposed Retention
300
14.7
315
13.1

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TILDEN FOUNDATIONS

of the north pier 19° east of true meridian, and it was 1200 feet long; and the maximum width of the bar was 420 feet and the shoalest water on the bar was 8 feet.

In April, 1857, according to the survey then made under Col. J. D. Graham's superintendency, the longitudinal axis bore 10° east of that meridian and it was 2000 feet long, and the greatest width of the bar was 700 feet; while at the present time (August 15th, 1864) the longitudinal axis bears 15° west of that meridian, and its maximum width is 1080 feet.

Hence in the period of 7⅓ years the bar has grown in length 2800 feet, and in width 380 feet. The shoalest water on top of the bar was then 9½ feet, while now it is only 6 feet. The growth of the bar vertically upwards being 3½ feet in the same period, and during the same period the bar has swung around through an angle of 25° towards the Chicago shore *south of the harbor.*

The north pier has not been extended or changed since these effects have been going on, while the causes producing these changes have been constantly operating with their full effect.

Here then we have two periods—one of 6 and the other of 7⅓ years, affording us the following rates of changes in this bar annually:—

FIRST PERIOD.

Annual elongation of the bar,	134	feet.
" widening,	47	"
" growth in vertical height,	—0.25	"
" swinging of the bar towards south shore,	1½°	

SECOND PERIOD.

Annual elongation of the bar,	382	feet.
" widening,	52	"
" growth in vertical heighth,	0.47	"
" swinging of the bar towards south shore,	3.° 25′	

These important changes are thus seen on comparing the annual rates for the two periods working to the disadvantage of the harbor in an increasing annual ratio.

In the season of 1854 it seems that by dredging, a channel between the head of the bar and the head of the north pier, was obtained for a vessel drawing 12 feet to safely run in and out in *moderate weather*—see drawing B; with a channel so contracted and bordered too with moveable sand, it is at once seen that under a stiff gale this would be no harbor of refuge, without great risk of stranding, especially for a vessel drawing more than 10 feet. I am informed by the Boards of Public Works and of Trade of Chicago, that this dredged channel filled up during the next succeeding winter, and in the spring of 1858 vessels drawing 12 feet and even of less draught began to experience difficulty in entering directly, and have since been obliged to arrive and depart by a track seen on A. around the south end of the bar and along between it and the Central R. R. Co.'s breakwater. And the shoaling of the water on the bar, the elongation, widening, and swinging of the bar to the west have gone on so rapidly—as explained on p. 65—that serious difficulties have been met even in this roundabout track by vessels in coming up under N. E. winds; and the most serious apprehensions are now entertained that unless something be speedily done, the harbor will be rendered null for all national purposes. And well may this apprehension exist, for, by all the effects explained on p. 65 combined, it is readily computed that if the same causes producing these effects continue for three years longer, even the present passage between the bar and the R. R. breakwater will be effectually blocked to any craft drawing over 5 feet water.

II. *Causes producing the bar, making it to grow and swing towards the west shore, around a point near the head of the north pier, as a hinge.*

The lake shore for miles to the north of the harbor is sand, easily moved when stirred up.

The prevailing winds affecting the harbor are from E. and N. E., and if their strengths and directions be accurately measured for each day in the year, the resultant of all these forces will be found to be very great, and in direction nearly from due N. E.,

striking the shore as it now trends (in 1864) in an angle of 78°.

Let the line R. on drawing A. represent in magnitude and direction this resultant; decompose R. into its components P. L. respectively, perpendicularly, and parallel to the present direction of the shore, and we shall find P=0.98×R and L=0.208 ×R.

Now the force P. is expended in beating the shore and stirring up the sand; and the force L. produces the littoral current running southerly on that shore; and this littoral current carries portions of the sand along, filling up back of the pier, until the accretion of land there reaches out to the extremity of the pier; and then the sand is carried by this current past the pier and across the harbor and down southerly, as long as the wind blows. The swinging of the bar towards the west shore is the result of the S. E. winds which have their full effects sometimes, though with nothing like the force of E. and N. E. winds.

From this brief analysis, it is evident that if the north pier could always be kept extending in advance of the accretion north of it, there would be no serious difficulty in preserving a good channel at the mouth. Heretofore, from the commencement of these piers in 1833, to the present limit of extension, the work has been carried on in a spasmodic manner—as appropriations could be had.

III. *Measure and progress of the accretion north of the pier.*

Fortunately we have for the measure of the progress of the accretion good data. The red* dotted shore line of 1821, is the first record I can find of a shore line; the black dotted lines terminated at the back of the pier, are mapped from good surveys made in the years marked—and we may record the data in the following tabular form:—

* Black on the printed plan.

PERIOD.	No. of Years.	Progress of accretion along back of the Pier.	Rate of motion of shore line at pier Eastward per year.
1821 to 1833,	12 Years.	380 feet.	31.7 feet.
1833 " 1837,	4 "	320 "	80.0 "
1837 " 1839,	2 "	400 "	200.0 "
1839 " 1845,	6 "	350 "	30.8 "
1845 " 1857,	12 "	340 "	28.3 "
1857 " 1864,	7 "	250 "	35.7 "

These measures are taken from the chart of the surveys of 1857, reported by Col. Graham, and from my survey of 1839.

As the first period involves some doubt in respect to the red dotted line on drawing A., and as no piering was done prior to 1833, I will only use the data pertaining to the five subsequent periods since the piering was commenced.

It is seen that the direction which the pier had between the shore lines of 1845 and 1857, is the direction attending the least annual accretion, while the direction subsequently given to the pier as its extension progressed, is attended with a somewhat greater annual accretion, and the greatest annual accretion is that which occurred when the pier had the direction running a little south of east, before my superintendency commenced in April, 1839. By reference to my report on this harbor, Sept. 1st, 1839, printed [Senate Doc. 26th Cong. 1st Sess.] I find that the pier has since 1843 (when my superintendency ceased,) been carried out about 600 feet further in the direction and shape as far as it has been extended according to the plan recommended in that report. I am happy to find that time and experience now justify that recommendation.

In any hereafter extension, therefore, would it not be well, on account of hoping for the least annual accretion that will form back of the pier, to continue to follow the general direction then recommended? It would certainly seem to be wise to avail ourselves of the practical results of so long a term of engineering experience.

IV. *What the City of Chicago has been and now is doing, in the well grounded apprehension of the speedy closing of the passage around the south end of the bar.*

See drawing C. The firm of Fox & Howard, of Chicago, under contract with the city, commenced dredging, with a view to obtain a direct wide channel through the head of the bar, July 24th, and ended October 21st, 1863, removing in that interval 44,524 cubic yards, with four steam dredges, six sand scows, and one steam tug, working all the time the weather permitted. They again commenced with same force June 3d, 1864, and have continued to the present, having in the interim to 15th August, removed 44,000 cubic yards, and have just succeeded in opening a narrow channel, admitting propellers of 12 to 12½ feet draft. This channel, however, is, as yet, so narrow that on the 17th inst., while I was there, four vessels stranded on the bar in attempting to run in, several others entered safely, others again anchored in the offing, wind N. E. and strong for 12 hours previous. This liability of stranding will exist unless a breadth north and south of 300 or 400 feet be dredged sufficient to allow vessels to wear in coming in, and to a depth of 12 feet at least throughout.

On commencing operations this summer with the dredge, it was found that almost all they had gained by their last years work had been filled up again by the action of the littoral current, due to the component force L., during the winter, just as it was in the winter next succeeding the channel left by dredging in 1854.

The space from which these contractors are to remove the sand, at the expense of the city, at 50 cents per cubic yard, is embraced between the red tinted* borders on drawing C; and the depth is to be 15 feet throughout, so as to have 13 feet when the lake falls to its low stage. The sand removed is towed in scows with the steam tug and deposited to the south of the bar in deep water. The measurement of the amount removed is made as it rests in the scow's hoppers, by an Inspector appointed by the city.

Now, the great practical difficulties in maintaining a channel in this manner are these: the dredge cannot be worked in the

* Embraced between lines B C and E D on printed plan.

season except from about the 1st of June to the 20th of October—and even in this interval there are many days when it cannot be worked, in consequence of the roughness of the lake. The borders of the dredged channel are but slopes of sand, which on the agitation of the water easily moves, seeking the lower places, and thus partially if not wholly filling up the newly dredged cuts, thus necessitating a redredging. Again, during the following eight months, from October to June 1st, the whole channel dredged in the preceding season will be partially, if not wholly, filled, and when navigation opens the next spring no adequate channel there exists, nor can the dredges be put to work on account of spring gales, to reproduce one until long after it is much needed, and the season of active commerce has considerably advanced into summer.

The sum of $44,000 has been expended by the city in dredging under these difficulties, since July 24th, 1863, and only an inadequate channel is yet obtained, nor can there be one maintained in this manner, as long as the north pier be not *extended*, and be kept extended beyond the bar to cut off the effect of the littoral current caused by the force L. (explained on p. 67) and thus preserve the channel as it may be dredged out afterwards.

V. *Proposed plan best to be pursued.*

For reasons already given and those which will follow, all resting on facts derived from an experience of over 30 years, and by a proper use of the practical results produced by the pier work already constructed at this harbor, in connection with the results of the known laws of hydrodynamics, we certainly ought to be prepared to suggest a course, which if followed out will accomplish the end of maintaining a good adequate channel for this harbor.

Let the city extend the north pier 400 feet, which can yet possibly be done under the energy of her enterprising contractors (Fox & Howard) the present season, as long as the weather will permit, and the coming winter's winds will not probably fill the channel that will be left when this season's dredg-

ing closes. Early the next season as possible, extend the pier 110 feet more, making a total extension of 510 feet, and we shall have it out to the curve of the 12 feet water. See drawing A. Then be sure to dredge the channel if needs be next summer to a sufficient width and depth, and it, under the protection of the pier extention, will be secured, until the accretion on the north of the pier will again reach the end of the pier. When will this occur? Let us see. Take the last two periods in the table (p. 68) and combine them into one from 1845 to 1864—19 years; in this interval the shore line has advanced eastwardly, just back of the pier, 590 feet, which is at the rate of 31 feet per year. Now, if we go north to Ontario street, I find that there this shore line, in the same period, has advanced easterly only 468 feet, or at the rate of 24.6 feet per year. Now, the component force L. will continue to act (though with a less and less effect than at present, as will be seen.) We can readily construct the probable shore line as it would be in 1881, when the sand under the action of L. would again begin to pass the end of the 510 feet of the proposed extension, to again form a bar across the mouth of the harbor. This shore line has been carefully put in red on drawing A.

It is seen by the eastern motion of the shore line that it is constantly assuming positions more and more approaching at right angles to the direction (N. E.) of the prevailing winds. The component force L., therefore, becomes smaller and smaller, until, when the shore line by a still farther extension of the north pier than now proposed to be immediately done, shall become at right angles with the direction of the prevailing winds, L. will become absolutely zero.

For example, the present time (1864) $L=0.208\times R$; and 17 years hence L. will not be as great as $0.208\times R$; and before the year 1900, L. will become zero. These conclusions, based upon facts derived from experience, are certainly favorable conditions for the future of the harbor at Chicago; and they encourage the hope that by immediately extending the north pier 400 feet and adding 110 feet next season, the bar at the extremity

will not again begin to form, short of the year 1881, by the action of L; and that period will be as much beyond that as L. diminishes from its present strength in producing the littoral current. Therefore, beyond the extension now recommended, the north pier should be carried out as rapidly as possible to obtain means to do it, to the 24 feet curve, seen on drawing A. This would add 490 feet to the work after next year. The pier would then be beyond where L. becomes zero, and after which the drifting sand by the littoral current would move northward under the prevailing winds. The south pier should also be carried out, as means can be obtained, so as to be less in extent than the north by 1600 feet, when the north pier shall have been extended to the 24 feet curve. This would make the south pier to reach to about 900 feet beyond the N. E. angle of the I. C. R. R. Co.'s breakwater.

The direction which I think the proposed extension of the north pier should have is 71¼° east of the magnetic meridian, and the direction of the south pier extension should be so given as to have a width of water for the mouth of 350 to 400 feet between the piers. This would cause the extension of the south pier to bear about S. 87° E. mag. meridian. Besides the dredging contracted by the city to be done this season, the city authorities, while I was in Chicago, passed an ordinance, appropriating $75,000 (dollars), for extending the north pier 400 feet this season, and Fox & Howard, well prepared for doing such work, have put in a bid to do this for $62,200, upon such plan and specifications as will meet the approbation of the U. S. Engineer Department, all to be substantially put in and filled with stone, and decked over this season if the weather permit. And the Board of Public Works are now only wating for me to give them the direction for the extension; also to obtain permission of the Government to allow the extension to be commenced immediately by the city. I have carefully examined the plans and specifications of the cribs, and should approve of them.

VI. *What shall be done with the* $25,000 *allotted out of the general appropriation by Congress, this year, for the "Repairs and Security of this Harbor."*

B
ENTRANCE
the
Graham
July 22d 1854


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I recommend this. Let the city proceed to dredge and put in the 400 feet of extension, and after that the money under my control could, under the law, be expended for preserving the channel thus produced, by hiring Messrs. Fox & Howard to dredge next season, or should it turn out that no dredging would be required, then to expend the government $25,000 in making the 110 feet additional that would be required to make up the whole 510 feet extension of the north pier, and thus to preserve the channel that will have been made by that time by Fox & Howard, at the expense of the city. This firm has all the required machinery ready for the work.

The piers as they exist need but little or no repairs, which ought to be made by the U. S.—and without a previous extension of the north pier—in my estimation the money will go but a very short way towards securing a channel; besides we could not now dredge there if it were desirable, as Fox & Howard are now working there under a contract for the city. To commence to build machinery for dredging or for putting in pier work, would be unwise, as the sum allotted out of the appropriation would only begin, as it were, to pay for the machinery.

In conclusion, I have to express my thanks for the assistance I have received in obtaining the soundings and other data, from E. S. Chesbrough, Esq., City Engineer, of Chicago, and his assistants.

I have the honor to remain,
Very respectfully, your obdt. servant,
T. J. CRAM, Col. A.D.C.,
Lt.-Col. Corps Engineers.

To Brig.-Gen. Richard Delafield,
Chief Engineer.

According to the foregoing plan, and in conformity with the suggestions of Col. Cram, the pier extension was commenced last year with the hope of completing it before winter; but owing to unfavorable weather, the contractors Messrs. Fox & Howard and O. B. Green & Co., succeeded in putting down only about 80 feet before the close of the working season. Much anxiety

was felt, on account of the possibility of the newly dredged bt still too narrow channel being filled up so much during the wi ter as to destroy navigation, at least for vessels of heavy draf As soon as possible this spring, soundings were taken, and th channel though partially obstructed, was found still sufficient, great care was used.

August 25.—Since the first of April, the north pier has bee extended to its full length, and most of the way to its fu height. It was thought best not to finish up the outer end t the full height immediately, but to leave it for a time abou even with the surface of the lake, to be settled by the actio of storms, and then complete it with better prospects of retai ing its outlines unchanged. As was expected the storms di affect the outer end considerably, causing the end of one cri to lean southward about three feet.

The cost of the pier extension has been materially increase by the increased amount of dredging, caused by the change i direction from what was originally proposed; but this chang undoubtedly makes the entrance to the harbor easier for vessel coming from the north.

The dredging at the entrance of the harbor, was resumed b the contractors, Messrs. Fox & Howard, as soon as the seaso would permit. It has exceeded the amount originally estimated 70,000 cubic yards, by about 50,000 cubic yards. This wa owing partly to the partial filling up of the channel dredge before the extension of the north pier, partly to the impossibilit of not getting deeper than 14 feet, in some places in order t secure that depth generally, and partly owing to dredging ove a somewhat larger area than was at first intended.

Some points still exist in the channel where the soundings a ordinary water are less than 14 feet, but they were thought to unimportant to make it necessary to continue the work an longer the present season.

The city may now be congratulated upon having so good a entrance to her harbor; especially in view of the great deteric

ration of the old or south channel, and the certainty, as shown so clearly in Col. Cram's report, of its speedy filling up by the bar now extending in that direction.

WASHINGTON STREET RIVER TUNNEL.

By direction of the Board, the plans prepared by the president, for a tunnel under the river on Washington street, were carefully examined, and submitted to the inspection of several distinguished engineers, either resident in this city or occasionally visiting it. As usual, there was some variety of opinion with regard to details; but in order to make use of the most important suggestions of those gentlemen, it was not necessary to change any essential feature of Mr. Gindele's last plan. The roof of the river portion of the tunnel was strengthened somewhat, to give greater security against the possible effect of dragging anchors or the sinking of a vessel over it.

Considerable labor was required in preparing the specifications and detailed plans, in which, Mr. Wm. Thomas, architect, of this city rendered valuable assistance.

Which is respectfully submitted,

E. S. CHESBROUGH,
City Engineer.

FINANCIAL STATEMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1865.

WATER DEPARTMENT.

	Dr.	Cr.
Water Works, (cost to date,)	$1381,735.27	
Water Works Income,		$1350,687.95
Water Loan Bonds, 6 per cent,		1030,000.00
Water Loan Bonds, 7 per cent,		278,000.00
Water Loan Interest,	599,714.90	
Water Expenses and Repairs,	475,139.74	
Discount on 6 per cent Water Loan Bonds,	57,133.08	
Water Funds in hands of City Treasurer, (am't due him,)		51,877.85
Water Works Stock,	15,198.25	
Water Works Coal,	8,773.18	
Water Works Service Cocks,	1,410.84	
Duncan, Sherman & Co., Coupon account,	38,340.00	
R. D. Wood & Co., Water Pipe account		4,597.08
Lake Tunnel, (expenditure to date,)	109,308.86	
Water Pipes,	24,026.52	
Pumping Works—Stock on hand,	4,382.24	
	$2715,162.88	$2715,162.88

WATER FUND.

STATEMENT of the Cash Receipts by the Board of Public Works from April 1, 1864, to March 31, 1864, inclusive; and detailed statement of the cost of the various operations conducted by the Board during the same time:—

RECEIPTS.

Water Tax collected,	224,245.93	
Receipts for tapping pipes,	5,189.00	
" for shutting off and letting on water,	191.75	
" for sale of hydrants, material, coal, and labor,	1,928.71	
Discount on New York drafts bought,	104.02	
Labor done for Sewerage and City departments,	1,423.27	
Proceeds of 7 per cent Bonds,	177,000.00	
Premium and interest on the same,	20,490.87	
Amount, erroneously charged this fund, refunded,	32.00	
	$430,605.55	
ADD—		
Balance in hands of City Treasurer, March 31, 1864,	6,531.72	
Amount due City Treasurer, March 31, 1865,	51,877.85	$489,015.12

EXPENDITURES.

ADDITIONS TO WATER WORKS.

WABASH AVENUE MAIN.

		Cash Payment.	True Cost.
24-inch pipe laid,	$68,140.00		
Proving pipe,	300.00		
Hauling pipe,	1,078.00		
Lyman & Goggin, trenching and backfilling,	2,534.00		
Labor by city employees,	2,755.74		
Lead,	5,100.00		
Gasket and coal,	243.00	$80,150.74	
ADD—			
Pipe used, previously paid for,	$899.16		
One 24-inch stop cock,	200.00		
	$1,099.16		$81,249.90
Amounts carried forward,		$80,150.74	$81,249.90

		Cash Payment.	True Cost.
Amounts brought forward,		$80,150.74	$81,249.90
DISTRIBUTING PIPES LAID.			
Cast iron pipe 4, 6, and 8-inch,	$65,688.85		
Testing and laying pipe,	3,439.17		
Trenching and backfilling,	11,479.77		
Lead,	8,744.15		
Tapers, caps, sleeves, and branches,	2,017.65		
Hay, oats, and feed,	529.27		
Gasket and coal,	100.47		
Repairing tools,	19.26		
Horse shoeing,	27.78		
Repairing harness,	32.00		
Advertising for proposals for trenching,	21.75		
Miscellaneous,	90.62	92,190.74	
Add—			
Pipes used, previously paid for,	$9,273.68		
New hydrants put in,	2,265.75		
New stop-cocks put in,	1,001.01		
Pipe layers' tools made at shop,	157.24		
Tapping tools " "	53.32		
	$12,751.00		
Deduct—			
Stop-cocks, sleeves, and caps for private parties,	113.24		
	$12,637.76		$104,828.50
Expenses at Pump Works for new engine,			7.26
Total addition to cost of Water Works not including Lake Tunnel,		$172,341.48	$186,085.66
LAKE TUNNEL.			
Dull & Gowen, on account Lake Tunnel, outer crib, and extras,	$97,670.22		
Services of Engineer,	250.46		
Services of draughtsmen,	449.55		
Services of inspectors,	4,883.00		
Labor,	395.67		
Lumber,	804.21		
Piles, including freight,	718.49		
Office fixtures, (inspectors',)	58.15		
E. W. Smith, consulting engineer,	400.00		
Hardware,	53.85		
Amounts carried forward,	$105,683.60		

		Cash Payment.	True Cost.
Amounts brought forward,	$105,683.60		
Brick,	17.50		
Repairing instruments,	192.75		
Chain,	36.91		
Horse keeping,	53.65		
Coal for inspectors' office,	42.90		
Miscellaneous,	154.05	$106,181.36	
Add—			
Labor at Pump Works shop,	$287.88		
Deduct—			
Services of inspector,	80.00		
	$207.88		106,389.24
		$106,181.36	$106,389.24

WORKING EXPENSES AND REPAIRS.

EXPENSES AT PUMPING WORKS.

Salary of Engineer and two assistants,	$4,200.00	
Labor,	8,028.70	
Coal, 2604 tons, 357lbs,	27,760.85	
Coal for work shop,	322.53	
Oil and tallow,	752.59	
Gasket and packing,	108.03	
Hydrant castings,	4,868.39	
Brass Castings,	907.48	
Nuts, bar iron, and steel,	750.03	
One 6 ton scale,	272.18	
New piston, freight and truckage,	1,421.79	
Lead,	207.66	
Gas, $137.09; hardware, $92.64,	229.73	
Hay, oats, and feed,	136.13	
Horse shoeing,	20,75	
Waste, $206.56; lumber, $69.54,	276.10	
Carpenter work, windows and doors,	161.66	
Roofing,	21.21	
Mason work and plastering,	84.45	
Gas fittings,	16.25	
Overcharge on hydrants,	20.00	
Patent right on five hydrants,	25.00	
Paint, labor, and fixtures,	67.43	
Leather,	36.96	
Miscellaneous,	149.01	$50,844.9.
Amounts carried forward,		$50,844.9.

			Cash Payment.	True Cost.
Amount brought forward,			$50,844.91	
Add—				
Coal used, previously paid for,		$5,619.70		
Balance work shop account transferred,		3,170.43		
		$8,790.13		
Deduct—				
Old iron sold,	$562.76			
Hydrants and stop cocks sold,	381,00			
Wrenches for Fire Department,	12.00			
Labor and mate'ls for tunnel,	287.88			
" " for bridges and sewers,	771,42			
Hydrants, stop-cocks, & labor used for, and charged to, extension and repairs,	8,804.59			
Labor at shop for sundries,	322.55			
Stock on hand,	4,382.24			
Coal sold,	270.65	15,795.09		
		$7,004.96		$43,839.95
IMPROVEMENTS AT RESERVOIRS AND INLET.				
West Reservoir fence,		$2,478,45		
Dredging Basin,		2,632.50		
Sidewalk, North Reservoir,		69,00		
Keys for reservoirs,		2.00		
Hauling and filling,		122.25	5,304.20	
Add—				
Work at shop,		150.47		5,454.67
NEW ENGINE.				
Traveling expenses of Commissioners and Engineer,			264.90	264.90
REPAIRS OF PIPES, HYDRANTS, STOP-COCKS, AND MISCELLANEOUS OPERATING EXPENSES.				
Wages of caulkers and laborers on hydrants, stop cocks, and operating pipe,		$10,175.19		
Wheeling sand from basin,		1,295.62		
Salaries of hydrant inspectors and water police,		2,437.50		
Hay, feed, and oats,		459.29		
Carpenter work, lumber, and nails,		1,671.12		
Amounts carried forward,		$16,038,72	$56,414.01	$49,559.52

			Cash Payment.	True Cost.
Amounts brought forward,		$16,038.72	$56,414.01	$49,559.52
Pipes, tapers, and castings,		293.40		
Tools and hardware,		70.75		
Horse shoeing,		35.77		
Repairs at North Reservoir,		61.76		
Repairing tools,		64.05		
Repairing wagon and harness,		229.33		
Repaving,		159.68		
Lead,		225.56		
Coal,		169.34		
Brick, $165.00; cement, $269.25,		434.25		
Drains for hydrants,		174.25		
Telegraph house,		27.00		
Powder and safety fuse for blasting ice at inlet,		10.25		
Express on bonds to New York & Boston,		40.00		
Miscellaneous,		264.67	$18,298.78	
Add—				
Hydrants used,		$3,299.25		
Stop cocks used,		641.13		
Labor at shop,		387.81		
Watching Reservoirs,		163.70		
" Inlet,		601.38		
" Engine house, lot, & tunnel,		295.00		
Labor at pipe yard,		148.82		
		$5,537.09		
Deduct—				
Received for shutting off and letting on water,	$191.75			
Received for materials sold,	170.86			
" " putting telegraph cable thro' main at State St.	122.00			
Broken pipe sold,	169.67			
Difference in stock, 1864 & 1865,	453.10			
Labor for private parties,	29.00	1,136.38		
		$4,400,71		$22,699.49
WATER METERS.				
24 meters, fittings, etc.,		$3,293.06		
Repairs and setting,		1,114.24		
Lumber,		75.64		
Amounts carried forward,		$4,482.94	$74,712.79	$72,259.01

		Cash Payment.	True Cost.
Amounts brought forward,	$4,482.94	$74,712.79	$72,259.01
Castings,	314.17		
Carpenter work,	81.14		
Labor,	83.05		
Nails,	27.25		
		4,988 55	
Deduct—			
Valuation of meters charged stock,	$2,851.50		
Add—			
Depreciation on meters,	1,582.00		
	$1,269.50		3,719.05

OFFICE EXPENSES AND SALARIES.

Salaries of Commissioners,	$2,499.96		
Salary of Secretary,	800.00		
Salary of City Engineer,	1,200.00		
Salary of Assistant Engineer,	500.00		
Salary of City Superintendent,	600.00		
Salaries of clerks,	2,766.68		
Salaries of Water Assessors and Collectors,	6,049.92		
Salaries of draughtsmen,	1,924.19		
Labor, care of office, etc.,	961.64		
Blank books, stationery, binding, and printing,	1,424.04		
Advertising, (including bonds,)	722.19		
Newspapers,	16.78		
Scientific works, and City Directory,	6.49		
Office furniture and repairs,	200·40		
Expenses keeping Assessor's horse,	55.21		
Revenue stamps,	206.55		
Coal,	17.25		
Painting and calcimining,	77.52		
Miscellaneous,	91.89	20,120.71	
Deduct—			
Expenses refunded,	$32.00		
Add—			
Advertising interest payments,	10.00		
	$22.00		20,098.71
Total operating expenses,		$99,822.05	$96,076.77

			Cash Payment.	True Cost.
INTEREST.				
Interest on Water Loan Bonds, July 1, 1864, and January 1, 1865,		$72,940.00		
Commissions to Duncan, Sherman & Co.,		178.70		
Interest on advances by W. F. Coolburgh & Co.,		1,318.49		
Premium on New York draft refunded,		30.00	$74,467.19	
Add—				
Amount transferred from discount,		3,051.01		77,518.20
STOCK.				
36 wheelbarrows purchased,		$140.00		
Sundries,		85.85	225.85	
Add—				
Valuation meters furnished,		$2,851.50		
Deduct—				
Old hydrants sold,	$25.00			
Stop cock used,	200.00			
Depreciation of meters,	1,582.00	1,807.00		
		$1,044.50		1,270.35
COAL.				
Coal purchased not used,			8,773.18	8,773.18
INCOME.				
Rents paid back,			42.75	42.75
BONDS.				
Bonds, erroneously credited to Water Fund, transferred to Sewerage Fund,			2,000.00	2,000.00
WATER PIPES.				
Pipes purchased and not used,		$24,026.52		
Deduct—				
Amount due R. D. Wood & Co.,		4,597.08	19,429.44	
Amounts carried forward,			$104,938.41	$89,604.48

			Cash Payment.	True Cost.
Amounts brought forward,			$104,938.41	$89,604.48

SERVICE COCKS.

Services of tapper,		$958.00		
Service cocks purchased,		2,975.17		
Cast iron boxes and iron work,		1,312.83		
Permits, not used, refunded,		19.95		
Hay, oats, and feed,		259.95		
Carpenter work,		35.27		
Hardware,		21.60		
Horse shoeing,		5.50		
Lumber,		21.42		
Laying lead pipes,		50.25		
Plugs,		45.60		
Miscellaneous,		26.28	5,731.82	
		$5,731.82		
Add—				
Service cocks, previously paid for,		$206.16		
		$5,937.98		5,937.98
Cash receipts for tapping,	$5,120.00			
Work done for private parties,	35.03			
Drill sold,	2.50			
Barn and hay,	69.00			
Service cocks on hand, April 1, 1865,	1,410.84			
Profits on service cocks account,		699.39		
	$6,637.37	$6,637.37		
			$110,670.23	$95,542.46
Total addition to Water Works brought forward, (not including Lake Tunnel,)			172,341.48	186,085.66
Lake Tunnel expenditures brought forward,			106,181.36	106,389.24
Total operating expenses brought forward,			99,822.05	96,076.77
			$489,015.12	$484,094.13
Total cash expenditures,		$489,015.12		

SEWERAGE DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1865.

	Dr.	Cr.
Cleansing Chicago River,	$1,982.23	
Sewers North Division,	258,474.00	
Sewers South Division,	353,734.83	
Sewers West Division,	370,382.22	
S. Lind, Treasurer Sewerage Commissioners,	107,116,73	
Sewerage Loan Bonds, 6 per cent.		$87,000.00
Sewerage Loan Bonds, 7 per cent.		1,000,000.00
Sewerage Loan Bonds, cancelled,		100,000.00
Sewerage Sinking Fund,		37,831.61
Sewerage Sinking Fund Mortgages,	5,867.10	
Discount on Sewerage Bonds,	15,470.26	
Sewerage Loan Interest,		49,279.17
Sewerage Pipes,	5,944.86	
Sewerage Brick,	64.00	
Sewerage Stock,	3,318.38	
American Exchange Bank,	38,257.50	
House Drains,	16,106.00	
Dennis Coughlin,	1,561.51	
Galena & Chicago Union Railroad Co.		382.55
Sewerage Fund in Hands of City Treasurer,	87,324.17	
Cement Account,	310.19	
Sewerage Sinking Fund with City Treasurer,	271.55	
Langan & McHugh, contractors,		627.44
Lot 3, Block 4, (E. ½) Kinzie's Addition,	68.50	
South-half Lot 5, Block 123, School Section Add.	22.18	
Pittsburgh, Fort Wayne & Chicago Railroad Co.		616.84
Z. Cobb, ag't., 80 feet west half Lot 7, Block 36, O.T.	31.53	
Chicago, Burlington & Quincy Railroad Co.		6,744.01
Charles H. Cook,		69.00
Sewerage man hole and catch basin covers,	941.67	
Sewerage Expenses and Repairs,	16,357.61	
Owners Lots 1, 2, 7, and 8, Block 5, J. R. Storrs' Add.	94.54	
Martin Muleney, contractor,		1,150.94
	$1,283,701.56	$1,283,701.56

SEWERAGE FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1, 1864, to March 31, 1865 inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:—

RECEIPTS.

Proceeds of 65 seven per cent. bonds sold, including premium and interest,	$76,083.07	
Rec'd from City account of Severage Tax, 1863,	3,593.59	
Rec'd from City account of Severage Tax, 1864,	131,715.11	
House drain permits issued,	2,626.45	
Materials sold and work done for private parties,	1,639.29	
S. Land, proceeds of McCaffrey's note,	1,134.80	
Pat'k Smith, collected of S. McKay,	1,347.75	
Interest on the same,	513.25	
Interest on collateral of E. I. Tinkham & Co.,	210.00	
Discount on New York draft,	45.99	
Thirteen Bonds sold on account,	13,000.00	
	$231,909.30	
Balance in hands of City Treasurer, April 1, 1864,	79,145.52	$311,054.82

EXPENDITURES.

SEWERS—SOUTH DIVISION.

		Cash Payment.	True Cost.
Labor,	$3,129.73		
Services of Engineer,	1,023.05		
Cement,	59.62		
Lumber,	24.58		
Repairing gas pipe,	55.16		
Inspecting,	242.17		
Horse Keeping,	46.21		
Rodman,	35.33		
Brick,	458.29		
Repairing water truck,	20.50		
Services of draughtsman,	75.00		
Miscellaneous,	55.69	$5,225.33	
Amount carried forward,		$5,225.33	

		Cash Payment.	True Cost.
Amounts brought forward,		$5,225.33	
Add—			
Pipe used previously, paid for,	48.00		
Covers used previously paid for,	36.00		
Expense Sewer on Harrison Street,	433.00		
" " Twenty-Second St.,	2,564.06		
" " Wabash Ave.,	7,497.29		
" " Indiana Ave.	4,805.45		
" " State Street,	3,993.54		
" " Michigan Ave.,	11,668.50		
" " Fourteenth Street,	1,814.11		
" " Sixteenth Street,	1,360.64		
Cement used,	411.43		
	$35,064.02		
Deduct—			
Receipts for work done, $26,50			
Lanagan & McHugh, failure to fulfil contract awarded, 66.67	$93.17		
	$34,970.85		$40,196.18
SEWERS—WEST DIVISION.			
Labor,	$1,984.58		
Service of Engineer,	1,032.09		
Cement,	21.38		
Repairing gas pipe,	159.94		
Brick,	311.97		
Inspecting,	239.33		
Horse keeping,	46.22		
Rodman,	35.34		
Sand,	12.00		
12 inch pipe sewer on Willard Place,	69.00		
Repairing water truck,	20.50		
Drain on Maxwell Street,	54.00		
Draughtsmen,	75.00		
D. Coughlin's men on Polk Street.	516.29		
Miscellaneous,	70.74	4,648.38	
Add—			
Covers used previously paid for,	24.00		
Pipe used previously paid for,	260.40		
Cement used previously paid for,	572.38		
Expense Sewer on North Street,	95.00		
" " Reuben Street,	15.00		
" " Maxwell Street,	4,661.00		
Amounts carried forward,	$5,627.78	$9,873.71	$40,196.18

			Cash Payment.	True Cost.
Amounts brought forward,		$5,627.78	$9,873.71	$40,196.18
Expense sewer on Sheldon Street,		292.00		
" " Canal Street,		33.58		
" " Peck Street,		1,096.42		
" " Rucker Street,		1,189.64		
" " Sangamon Street,		2,468.14		
" " St. John's Place,		2,055.98		
" " Elizabeth Street,		1,026.23		
" " Peoria Street,		1,018.05		
" " Morgan Street,		1,296.40		
" " May Street,		2,468.71		
" Green Street,		1,469.92		
" " Jefferson Street,		759.17		
" " Halstead Street,		1,210.37		
" " Mitchell Street,		52.00		
" " Throop Street,		467.50		
Repairing gas pipe,		20.00		
		22,551.89		
Deduct—				
Rec'd for Maxwell St. drain,	$54.00			
Lanagan & McHugh, failure to fufil contract awarded,	66.67	120.67		
		22,431.22		27,079.60
SEWERS—NORTH DIVISION.				
Labor,		$2,358.36		
Services of Engineer,		923.72		
Repairing tools,		18.53		
Lumber,		30.04		
Repairing gas pipe,		55.16		
Inspecting,		171.34		
Horse keeping,		46.21		
Brick,		220.89		
Filling to protect sewers,		324.50		
Repairing truck,		20.50		
Service of draughtsman,		75.00		
Clay,		134.70		
Miscellaneous,		71.61	$4,450.56	
Add—				
Pipe used previously paid for,		$795.00		
Covers used previously paid for,		60.00		
Cement used previously paid for,		417.26		
Expense Sewer on North Market St.,		16.00		
" " Chicago Ave.,		383.50		
Amounts carried forward,		$1,671.76	$14,324.27	$67,275.78

		Cash Payment.	True Cost.
Amounts brought forward,'------	$1,671.76	$14,324.27	$67,275.78
Expense sewer on Division Street, ---	140.47		
" " Wolcott Street,----	7,399.20		
" " Elm Street,-------	96.86		
" " White Street, -----	1,258.62		
" " Huron Street,-----	1,436.22		
" " Superior Street, ---	1,459.71		
" " Pearson Street,----	1,992.52		
" " White & Wolcott Sts.,	106.44		
	15,561.80		
Deduct—			
Lanagan & McHugh, failure to fulfil contract awarded,----------	66.66		
	$15,495.14		19,945.70
SEWERAGE—INTEREST.			
Interest on Sewerage Loan Bonds, July 1, 1864, and January 1, 1865,	$74,345.00		
Interest on advance by W. F. Coolbaugh, & Co.,----------	221.33		
Commission to American Exch. Bank,--	183.59	74,749.92	
Deduct—			
Interest coll'd of S. McKay,--------	$513.25		
Accrued interest on 25 bonds sold,----	593.07		
	$1,106.32		73,643.60
CLEANSING SEWERS—SOUTH DIVISION			
Labor,----------	$5,204.34		
Repairing tools,----------	6.25		
Water used for flushing,----------	186.12		
Miscellaneous,----------	7.62	5,404.33	5,404.33
CLEANSING SEWERS—WEST DIVISION.			
Labor, ----------	$1,828.50		
Repairing tools,----------	24.77		
Inspecting,----------	169.00		
Miscellaneous,----------	5.14	2,027.41	$2,027.41
CLEANSING SEWERS—NORTH DIVISION.			
Labor,----------	$1,842.85		
Water used for flushing,----------	131.83		
Amounts carried forward,-------	$1,974.68	$96,505.93	$168,296.82

		Cash Payment.	True Cost.
Amounts brought forward,	$1,974.68	$96,505.93	$168,286.82
Repairing tools,	6.25		
Miscellaneous,	5.14	1,986.07	1,986.07

REPAIRS OF SEWERS—SOUTH DIVISION.

Labor,	$1,055.60		
Cement,	21.87		
Brick,	36.83		
Repairing tools,	18.53		
Miscellaneous,	3.34	1,136.17	
Add—			
Covers used previously paid for,	$550.26		
Cement used previously paid for,	112.47		
Brick used previously paid for,	183.75		
	$846.48		1,982.65

REPAIRS OF SEWERS—WEST DIVISION.

Labor,	$893.79		
Cement,	35.12		
Brick,	63.83		
Miscellaneous,	3.33	996.07	
Add—			
Covers used previously paid for,	$586.46		
Cement used previously paid for,	34.94		
Brick used previously paid for,	185.08		
	$806.48		1,802.55

REPAIRS OF SEWERS—NORTH DIVISION.

Labor,	$626.52		
Cement,	16.26		
Brick,	10.24		
Miscellaneous,	3.33	656.35	
Add—			
Covers used previously paid for,	$126.26		
Cement used previously paid for,	16.72		
Brick used previously paid for,	13.10		
	$156.08		812.43
Amounts carried forward,		$101,280.59	$174,880.52

		Cash Payment.	True Cost.
Amounts brought forward,		$101,280.59	$174,880.52
HOUSE DRAINS.			
Service of Engineer,	$1,200.00		
Horse keeping for Engineer,	74.72		
Labor,	201.49		
Permits refunded,	36.50		
Inspecting,	738.50		
Services of draughtsman,	325.00		
Car tickets,	12.70		
Advertising private drain notice,	24.75	2,613.66	
Deduct—			
Cash receipts for permits,	$2,626.45		
Labor for private parties,	24.52		
	$2,650.97		
Add—			
Pipe junctions used,	1,648.80		
	1,002.17		1,611.49
CLEANSING CHICAGO RIVER.			
Expenses Desplaines Survey,	$452.25		
" Calumet "	485.42		
Services of Engineers,	112.48		
Salaries of special Commissioners,	750.00		
Repairing Surveying instruments,	15.50		
Repairing wagons and tools,	24.25		
Drawing materials and paper,	16.00		
Blacksmith work, making stakes, &c.,	15.58		
Advertising for plans,	17.25		
Miscellaneous,	19.50		
Labor,	74.00	1,982.23	1,982.23
MAN HOLE AND CATCH BASIN COVERS.			
Labor,	$999.25		
Oak lumber and freight,	1,661.49		
Nails and spikes,	321.28		
Ten barrels tar,	76.00	3,058.02	
Deduct—			
Covers sold,	$280.28		
Covers used for sewers and repairs,	2,363.98		
	2,644.26		413.76
		$108,934.50	$178,888.00

		Cash Payment.	True Cost.
Amounts brought forward,		$108,934.50	$178,888.00
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissions,	$2,562.45		
Salary of Secretary,	800.00		
Salary of City Engineer,	1,200.00		
Salary of Assistant Engineer,	500.00		
Salary of Superintendent,	750.00		
Salaries of Clerks,	2,641.68		
Blank books and Stationery,	228.94		
Adv'g (including proposals for bonds),	291,50		
Daily papers and scientific works,	19,47		
Revenue Stamps,	109.99		
Painting and cleaning,	103.22		
Printing, including report April 1. 1864,	255.35		
Office furniture,	169.96		
Repairs,	7.39		
Fuel,	19.50		
Draughtsman,	27.78		
Miscellaneous,	93.23	9,780.46	9,780.46
SEWERAGE PIPES.			
Pipes purchased,	$3,718.73		
Labor and Miscellaneous,	66.87		
Freight on pipe,	104.02	3,889,62	
SEWERAGE STOCK.			
Tools and repairing tools,	$341.11		
Lumber,	51.37	392.48	
Add—			
Steam Engine from Ringold Place sewer,	$500.00		892.48
SEWERAGE BRICK.			
Brick purchased and labor,		261.31	
CEMENT ACCOUNT.			
Cement purchased,		1,882.95	
NORTH STREET SEWER.			
Brick $81.00, Labor $14.00,		95.00	
Amounts carried forward,		$125,236.32	$189,560.94

		Cash Payment.	True Cost.
Amounts brought forward,		$125,236.32	$189,560.94
HARRISON STREET SEWER.			
Brick $385.00 Labor $48.00,		433.00	
NORTH MARKET STREET SEWER.			
Two centers left in sewer,		16.00	
CHICAGO AVENUE SEWER.			
Filling street,	$315.25		
Labor $62.00, Sand $6.25,	68.25	383.50	
REUBEN STREET SEWER.			
Labor,		15.00	
DIVISION STREET SEWER.			
Lanagan & McHugh balance contract,		140.47	
MAXWELL STREET SEWER. 793 FEET. 5 FEET SEWER.			
W. Carter, balance contract,	$115.58		
Services of Engineer,	72.22		
Bricks,	2,087.50		
M. Mulaney, on contract,	2,022.18		
Labor,	90.50	4,387.98	
Add—			
Covers used,	$15.00		
Pipe used,	$16.20		
	$31.20		
Deduct—			
Brick sold,	$115.00	83.80	
WOLCOTT STREET SEWER. 1420 FEET 3 FEET. 275 FEET 1 FEET.			
Lanagan & McHugh, balance contract,	$228.50		
Wm. Woodruff, contract,	4,971.75		
Brick,	1,838.63		
Labor and inspecting,	289.00		
Engineers services,	38.89		
Cement,	52.50	7,419.27	
Amounts carried forward,		$138,031.54	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,--------			$138,031.54	$189,560.94
Add—				
Covers used, ----------	$72.00			
Pipe used, ----------	28.15			
	$100.15			
Deduct—				
Brick used for other purpose,-	$120.22	$20.07		
ELM STREET SEWER.				
Lanagan & McHugh balance contract,------			96.86	
SHELDON STREET SEWER.				
Brick, ----------		$260.00		
Labor and inspecting,---------- ------		32.00	292.00	
CANA STREET SEWER.				
W. Carter, balance contract,----------		$16.43		
Repairing gas pipe broken by sewer, ----		17.15	33.58	
RUCKER STREET SEWER. 489 FEET. 2 FEET SEWER.				
W. Carter, contract,----------		$1,009.61		
Labor and inspecting, ----------		148.83	1,158.44	
Add—				
Covers used,----------	$18.00			
Pipe used,----------	13.20	$31.20		
PECK STREET SEWER. 838 FEET. 2 FEET SEWER.				
W. Carter, balance contract,----------		$174.17		
M. Mulaney, on contract, ----------		545.87		
Brick, ----------		247.00		
Labor,----------		18.50	985.54	
Add—				
Covers used,----------	$18.00			
Pipe used,----------	11.55			
	$29.55			
Deduct—				
Brick used elsewhere,----------	$15.00	$14.55		
Amount carried forward,---------			$140,597.96	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,			$140,597.96	$189,560.94
WHITE STREET SEWER. 755½ FEET. 2 FEET.				
Wm. Woodruff, contract,		$755.50		
Brick,		432.32		
Labor and inspecting,		37.00	1,224.82	
Add—				
Covers used,	$42.00			
Pipe used,	19.80			
	61.80			
Deduct—				
Brick used elsewhere,	$28.00	$33.80		
HURON STREET SEWER. 842 FT. 2 FT. 731 FT. 1 FT.				
Lanagan & McHugh, balance contract,		$393.89		
Wm. Woodruff, contract,		408.00		
Brick,		385.78		
Labor and inspecting,		213.45	1,401.12	
Add—				
Covers used,	$36.00			
Pipe used,	23.10			
	59.10			
Deduct—				
Brick used elsewhere,	$24.00	$35.10		
SUPERIOR STREET SEWER. 844 FT. 2 FT. 382 FT. 1 FT. SEWER.				
Lanagan & McHugh, balance contract,		$393.87		
Wm. Woodruff, contract,		412.00		
Brick,		382.90		
Labor and inspecting,		241.84	1,430.61	
PEARSON STREET SEWER. 929 FT. 2 FT. 159 FT. 1 FT. SEWER.				
Lanagan & McHugh, balance contract,		$394.15		
Wm. Woodruff, contract,		882.00		
Brick,		469.32		
Services of Engineer,		60.63		
Labor and inspecting,		158.97	1,965.07	
Amounts carried forward,			$146,619.58	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,			$146,619.58	$189,560.94
Add—				
Covers used,	$36.00			
Pipe used,	21.45			
	$57.45			
Deduct—				
Brick used elsewhere,	$30.00	24.45		
WHITE AND WOLCOTT STREET SEWER.				
Lanagan & McHugh, balance contract,			106.44	
TWENTY-SECOND STREET SEWER. 453 FEET. 3 FEET.				
M. Mulaney, on contract,		$477.36		
Brick,		2,108.37		
Services of Engineer,		54.16		
Labor and inspecting,		231.33		
Cleansing,		149.00	3,020.22	
Add—				
Covers used,	$12.00			
Pipe used,	6.60			
	$18.60			
Deduct—				
Brick used elsewhere,	$59.00			
Engine charged stock account,	500.00	$559.00	$540.40	
WABASH AVENUE SEWER. 1387 FT. 2½ FT. 984 FT. 1 FT.				
Thos. Mackin, contract and extra compensation allowed by Common Council,		$5,705.37		
Brick,		396.16		
Labor and inspecting,		938.19		
Cement,		195.22		
Hauling and inspecting brick,		143.50		
Miscellaneous,		33.85	7,412.29	
Add—				
Covers used,	$138.00			
Pipe used,	33.00			
	$171.00			
Deduct—				
Brick used elsewhere,	86.00	85.00		
Amounts carried forward,			$157,158.53	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,			$157,158.53	$189,560.94
INDIANA AVENUE SEWER. 1262 FEET. 2 FEET.				
Thos. Mackin, contract,		$4,244.24		
Services of Engineer,		108.33		
Brick,		67.20		
Labor and inspecting,		250.85		
Cement,		93.43	4,764.05	
Add—				
Covers used 66.00, Pipe used, 13.20, 79.20				
Deduct—				
Brick used elsewhere,	$37.80	$41.40		
STATE STREET SEWER. 1218 FEET. 2½ FEET.				
Thos. Mackin, contract and extra compensation allowed by Common Council,		$2,936.18		
Brick,		655.00		
Services of Engineer,		108.33		
Cement,		97.58		
Labor and inspecting,		160.00	3,957.09	
Add—				
Covers used,	$60.00			
Pipe used,	21.45			
	$81.45			
Deduct—				
Brick used elsewhere,	45.00	$36.45		
ST. JOHN'S PLACE SEWER. 781 FEET. 2 FT. 85 FEET. 1 FT.				
M. Mulaney, on contract,		$544.26		
Lanagan & McHugh, on contract,		637.82		
Brick,		452.00		
Services of Engineer,		38.89		
Labor and inspecting,		142.63	1,815.60	
Add—				
Covers used,	$42.00			
Pipe used,	19.80			
	$61.80			
Deduct—				
Brick used elsewhere,	$30.00	31.80		
Amounts carried forward,			$167,695.27	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,			$167,695.27	$189,560.94
ELIZABETH STREET SEWER. 451½ FEET.		2 FEET.		
Lanagan & McHugh, on contract,		$648.59		
Brick,		192.00		
Labor and inspecting,		46.00	886.59	
Add—				
Covers used,	$24.00			
Pipe used,	13.20			
	$37.20			
Deduct—				
Brick used elsewhere,	12.00	25.20		
MICHIGAN AVENUE SEWER. 2062 FT. 2½ FT.		1220 FT. 2 FT.		
T. Mackin, contract and extra compensation allowed by Council,		$8,841.65		
Brick,		1,575.87		
Freight on brick,		198.00		
Services of Engineer,		216.66		
Cement,		242.97		
Receiving and hauling brick,		359.00		
Labor and inspecting,		183.55	11,617.70	
Add—				
Covers used,	$144.00			
Pipe used,	33.00			
	$177.00			
Deduct—				
Brick used elsewhere,	167.00	$10.00		
PEORIA STREET SEWER. 471 FEET.		2 FEET.		
Lanagan & McHugh, on contract,		$676.62		
Brick,		141.61		
Labor and inspecting,		52.25	870.48	
Add—				
Covers used,	$24.00			
Pipe used,	13.20			
	$37.20			
Deduct—				
Brick used elsewhere,	9.00	$28.20		
Amounts carried forward,			$181,070.04	$189,560.94

75648

			Cash Payment.	True Cost.
Amounts brought forward,			$181,070.04	$189,560.94
FOURTEENTH STREET SEWER. 467¼ FEET. 2 FEET.				
M. Mulaney, on contract,		$1,188.65		
do. extra work and materials,		60.53		
Brick,		264.00		
Services of Engineer,		36.11		
Labor and inspecting,		44.16	1,593.45	
Add—				
Covers used,	$18.00			
Pipe used,	9.90			
	$27.90			
Deduct—				
Brick used elsewhere,	17.00	$10.90		
SIXTEENTH STREET SEWER. 419½ FEET. 2 FT. 80 FEET. 1 FT.				
M. Mulaney, on contract,		$891.04		
do. extra work and materials,		63.92		
Brick,		198.00		
Labor and inspecting,		40.67	1,193.63	
Add—				
Covers used elsewhere,	$18.00			
Pipe used,	3.30			
	$21.30			
Deduct—				
Brick used elsewhere,	12.00	9.30		
MORGAN STREET SEWER. 425 FEET 2 FT.				
Lanagan & McHugh, on contract,		610.53		
do. extra work and materials,		77.74		
Brick,		429.76		
Labor and inspecting,		66.00	1,184.03	
Add—				
Covers used,	$18.00			
Pipe used,	1.65			
	$19.65			
Deduct—				
Brick used elsewhere,	15.00	$4.65		
Amounts carried forward,			$185,041.15	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,			$185,041.15	$189,560.94
MAY STREET SEWER. 922 FEET. 2 FEET.				
Lanagan & McHugh, on contract,		$1,324.47		
Brick,		602.00		
Services of Engineer,		99.53		
Labor and inspecting,		180.00		
Cement,		5.00	2,211.00	
Add—				
Covers used,	$36.00			
Pipe used,	16.50			
	$52.50			
Deduct—				
Brick used elsewhere,	36.00	16.50		
GREEN STREET SEWER. 521 FEET. 2 FEET. 431 FEET. 1 FT.				
Lanagan & McHugh, on contract,		$748.33		
Brick,		236.03		
Labor and inspecting,		340.50	1,324.86	
Add—				
Covers used,	$18.00			
Pipe used,	9.90			
	$27.90			
Deduct—				
Brick used elsewhere,	15.00	12.90		
HALSTED STREET SEWER. 653 FEET. 2 FEET.				
M. Mulaney, on contract,		$527.31		
Brick,		425.00		
Services of Engineer,		54.17		
Labor and inspecting,		94.00	1,100.48	
Add—				
Covers used,	$30.00			
Pipe used,	14.85			
	$44.85			
Deduct—				
Brick used elsewhere,	28.00	$16.85		
Amounts carried forward,			$189,677.49	$189,560.94

			Cash Payment.	True Cost.
Amounts brought forward,			$189,677.49	$189,560.94
MITCHELL STREET SEWER.				
Inspecting,			52.00	
THROOP STREET SEWER.				
Brick,		$447.50		
Labor moving brick,		20.00	467.50	
JEFFERSON STREET SEWER. 475 FEET. 2 FEET.				
M. Mulaney, on contract,		$327.17		
Brick,		312.50		
Labor and inspecting,		36.00	675.67	
Add—				
Covers used,	$24.00			
Pipe used,	16.50			
	$40.50			
Deduct—				
Brick used elsewhere,	14.00	$26.50		
SANGAMON STREET SEWER. 985 FEET. 2 FEET.				
W. Carter, contract,		$1,269.75		
Brick,		$974.30		
Labor and inspecting,		195.19	2,439.24	
Add—				
Covers used,	$42.00			
Pipe used,	9.90			
	$51.90			
Deduct—				
Brick used elsewhere,	$23.00	$28.90		
MISCELLANEOUS.				
Amount paid to Sinking Fund for its proportion of Sewerage Tax, 1863, collected,			17,398.75	
W. F. Coolbaugh & Co., amount advanced on bonds,			13,000.00	
Adver'ing Master's sale in case of S. Lind, Treasurer,			20.00	
			223,730.65	
Balance in hands of City Treasurer, April 1, 1865,			87,324.17	
			$311,054.82	

SEWERAGE SINKING FUND.

RECEIPTS.

Proportion, Sewerage Tax, 1863,	$17,398.75	
Balance of principal Sinking Fund Mortgage, William Hildebrand,	10,600.00	
Interest on same,	2,659.18	
Balance rec'd of E. ½ lot 2, block 31, O. T.,	396.07	
	$31,054.00	
Balance in hands of City Treasurer, April 1, 1864,	$15,957.55	47.011.55

EXPENDITURES.

Forty-two Bonds purchased and cancelled, Nos. 1121 to 1162 inclusive, 7 per cent,	$42,000.00	
Premium and accrued interest on the same,	4,740.00	
	$46,740.00	
Balance in hands of City Treasurer, April 1, 1865,	$271.55	$47,011.55

CITY DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1865.

	Dr.	Cr.
City Appropriation Fund,	$44,828,76	
South Division,		$1,811.01
West Division,		9,150.74
North Division,	1,812.55	
Maxwell Street Engine House,	65.09	
Hospital on Cemetery Grounds,		1,606.82
Street Lamps, West Division,		282.35
Public Buildings,		9,135.90
Paving in front of Post Office,		814.66
Chicago Cemetery,		778.68
Lumber account,	214.19	
Twelfth Street Bridge,		12,000.00
North Market,		871.47
Chicago Harbor,		2,965.67
Public Parks,		940.74
Intersections of streets,		6,595.41
Canal Street improvement,	31.73	
North Clark Street improvement, straightening,		800.00
Dredging Bar at mouth of Harbor,	42,748.69	
Special Appropriation,		70,849.05
City Proportional Expense Account,		9.72
City Expense Account Office,	97.52	
North Pier extension,	28,154.48	
House Numbering,	104.85	
Bridge Department,	554.26	
Special Assessments,	92,552.73	
South Water Street improvement,		80.92
Kinzie and N. Water Streets improvement,		370.29
Sundry sidewalk improvements,		1,311.55
West Lake Street improvement,		8,414.52
Canal Street improvement, W. 493 W.		128.76
Improvement Alley, Block 46 Kinzie's Add.,		100.00
Opening Alley S. W. ¼ Lot 5, Block 64, C. T. Sub.,		110.00
North Clark Street improvement, W. 202 N.,		860.00
Canal Street improvement, W. 528 W.,		29.14
Milwaukee Avenue improvement,		3,285.43
Amounts carried forward,	$211,164.95	$133,302.83

Amounts brought forward,	$211,164.95	$133,302.83
Improvement Alley, Block 7 Ft. Dearborn Add.,	211,38	
Alley Block 46 O. T.,		317.10
Holt Street improvement,		16.81
Walnut Street improvement,		490.37
Alley Block 45 Sec. 7, 39, 14,		334.56
Fourteenth Street improvement,		6,266.97
Dredging South Branch near Bridgeport,		3,689.37
Eighteenth Street improvement,		3,520.00
Private Drain Assessment, J. R. & S. Add.,		22.18
North Clark Street improvement, W. 201 No.,		1,303.55
Division Street improvement,		4,120.83
West White Street improvement,		19,122.30
La Bar Street improvement,		2,576.75
North Avenue improvement,		8,664.35
Alley Block 2 Clark's Add.,		109.51
" " 6 Assessors' Division,		50.00
" " 7 "		50.00
" " 8 "		50.00
" " 9 "		50.00
" " 13 "		50.00
" " 14 "		50.00
" " 15 "		50.00
" " 16 "		50.00
Twentieth Street improvement,		12,400.24
Alley Block 9 Sampson & Green's Add.,		279.47
Fourteenth Street improvement (for deficiency),		4,457.20
Lumber Street improvement,		2,555.21
West Eighteenth Street improvement,		1,069.71
Alley N. ½ Block 68 Sec. 21, 39, 14 E.,		266.05
Alley N. ½ Block 45 C. T. Sub.		529.10
Private Drain Assessment Kinzie's Add.,		68.50
Sundry Lamp Post Assessments,		5,493.38
	$211,376.33	$211,376.33

BOARD OF PUBLIC WORKS APPROPRIATION FUND.

STATEMENT of the Cash Receipts by the Board of Public Works from April 1, 1864, to March 31, 1865, inclusive; and detailed statement of the cost of the various operations conducted by the Board during the same time:—

RECEIPTS.

Amount appropriated by Common Council,	$189,646.00	
Amount appropriated for North Market,	8,671.87	
Permits issued,	772.55	
Digging graves in Cemetery, and sand sold,	3,101.25	
Rent of lots, account Cemetery Fund,	140.50	
Lumber sold,	999.01	
Damages to bridges,	215.00	
Old iron sold from Rush Street bridge,	20.00	
Received from Chicago, Burlington, and Quincy, R. R. Co., account Canal Street improvement,	1,569.74	
Amounts erroneously charged, refunded,	155.87	
Rec'd from town of Lake its share of the cost of Egan Avenue bridge,	61.83	
Received for house numbers,	2,231.00	
Received from sundry special assessments for expenses incurred,	540.74	
Received for licenses and services of draughtsman,	23.60	
Oil cloth sold,	5.00	
Repaving Streets, and repairing sidewalks,	537.92	
Grading Indiana Avenue,	81.25	
Hauling dirt and street cleaning,	75.50	
Proceeds of 12 Bonds appropriated March 23, 1863, and 3 Bonds appropriated July, 11, 1864, for State Street bridge,	16,500.00	
	$225,348.63	
Balance in hands of City Treasurer, April 1, 1864,	35,088.78	$260,437.41

EXPENDITURES.

SOUTH DIVISION.

			Cash Payment.	True Cost.
Labor on streets and sidewalks,		$25,605.59		
Lumber,		4,963.39		
Stone,		1,591.15		
Gravel,		501.36		
Nails and spikes,		750.50		
Rodman,		175.32		
Distributing sidewalk notices,		1,481.25		
Repairing paving,		338.18		
Six barrels composition,		42.00		
Tools and repairs,		98.43		
Lettering street signs,		44.60		
Furnace,		18.00		
Stable Rent,		8.33		
Miscellaneous,		61,02	$35,679.12	
Add—				
Sand from Cemetery,		$12.50		
Deduct—				
Permits issued,	$257.47			
Sidewalks constructed,	67.07			
Grading Indiana Avenue,	81.25			
Planking West Lake St,	50.00			
Gravel and stone sold,	41.00			
Paving,	420.85	917.64		
		$905.14		$34,773.98

WEST DIVISION.

Labor on streets and sidewalks,	$27,353.67		
Lumber,	4,466.89		
Stone,	3,314.73		
Nails and spikes,	809.25		
Rodman,	150.02		
Distributing sidewalk notices,	3,145.00		
Tools and repairs,	157.31		
Street Signs,	11.20		
Service pipe to post cor. Lake and Water Streets,	60.15		
Filling cellar West Market,	50.00		
Rent of stable,	8.33		
P. Rorke, grading,	75.00		
Repairing and constructing sidewalks,	117.03		
Amounts carried forward,	$39,718.58	$35,679.12	$34,773.98

			Cash Payment.	True Cost.
Amounts brought forward,		$39,718.58	$35,679.12	$34,773.98
Miscellaneous,		50.50	39,769.08	
Add—				
Stone previously paid for,		120.00		
Deduct—				
Permits issued,	$257.55			
Intersections,	87.52			
Hauling dirt,	111.50			
Labor on street,	25.87	482.44		
		$362.44		39,406.64
NORTH DIVISION.				
Labor on streets and sidewalks,		$21,724.44		
Lumber,		2,222.44		
Stone,		3,305.54		
Nails and spikes,		360.75		
Rodman,		149.99		
Distributing sidewalk notices,		1,550.00		
Tools and repairs,		64.99		
Street signs,		52.37		
Paving,		12.50		
Watching sand,		225.00		
Land damages widening Division Street,		500.00		
Rent stable lot,		8.33		
Miscellaneous,		50.09	30,226.44	
Add—				
Gravel and stone from South Division,		41.00		
Deduct—				
Permits issued,	$257.53			
Hauling dirt and St. cleaning,	75.50	333.03		
		$292.03		29,934.41
CHICAGO CEMETERY.				
Labor and teams,		$3,991.53		
Salary Superintendent,		566.66		
Lumber and nails,		491.09		
Hardware and tools,		22.88		
Printing interment tickets,		3.00		
Sawing and dressing lumber,		6.50		
Gravel ticket refunded,		1.00	5,082.66	
Amounts carried forward,			$110,757.30	$104,115.03

		Cash Payment.	True Cost.
Amounts brought forward,		$110,757.30	$104,115.03
Deduct—			
Receipts, digging graves, sand sold, etc.,	$3,143.75		
Rents of lots,	140.50		
	$3,284.25		1,798.41

LUMBER ACCOUNT.

Lumber purchased, not used,		1,068.98	
Deduct—			
Lumber sold,	$999.01		69.97

PUBLIC BUILDINGS.

ENGINE HOUSES.

Carpenter work,	$188.63		
Lumber,	246.34		
Plumbing and gas fitting,	244.88		
Painting and glazing,	862.15		
Hardware,	25.53		
Hose tower U. P. H. engine house,	287.31		
Bell tower Union street,	300.00		
Bell tower North Avenue,	300.00		
Extra work on Long John engine house,	96.49		
Painting Blue Island Ave. engine house,	77.00		
Repairs on " " "	90.00		
Repairs on engine houses,	168.63		
Advertising for proposals to build,	12.38		
Five barrels composition,	40.00		
Nails,	10.75		
Miscellaneous,	13.38	2,963.47	2,963.47

ISLAND QUEEN ENGINE HOUSE.

T. Menard on contract for building,	$600.00		
Carpenter work,	213.84		
Blacksmith work,	48.18		
Plastering,	273.30		
Five barrels composition,	40.00		
Sand,	26.00		
Plumbing and gas fitting,	363.29		
Pointing,	67.00		
Lumber,	260.98		
Amounts carried forward,	$1,892.59	$114,789.75	$108,946.88

		Cash Payment.	True Cost.
Amounts brought forward,	$1,892.59	$114,789.75	$108,946.88
House drain,	100.95		
Painting,	187.55		
Sheet brass, $8.75, Nails, $2.70,	11.45		
Hardware,	8.54		
Ripping lumber,	60.36		
Repairs,	29.63	2,291.07	
Add—			
Hauling dirt by West Division,	111.50		
Deduct—			
Refunded by E. Baggott,	100.00		
	$11.50		2,302.57

MAXWELL STREET ENGINE HOUSE.

Elliott & Tnielan, contract,	$4,875.00		
Extending water pipe to engine house,	75.00		
Lumber,	61.09		
House drain,	54.00	5,065.09	5,065.09

COURT HOUSE.

Carpenter work,	$6.75		
Painting and glazing,	14.70		
Repairs City Clerk's office,	9.85		
Painting and cleaning City Attorney's office,	44.00		
Repairing water-closets,	15.75		
Plumbing,	18.25		
Cementing roof,	116.80		
New gas burners,	18.20		
Repairs on roof,	6.00		
Painting and glazing for alarm telegraph,	199.70		
Steam pipe and fixtures for "	130.00		
Labor in square,	48.00		
Repairing fountain,	9.40		
Dressing lumber,	6.50	643.90	643.90

HOSPITAL ON CEMETERY GROUNDS.

J. McEwen, contract carpenter work,	$7,550.00		
C. Pasch, contract masonry work,	4,735.00		
Extra carpenter and masonry work,	280.25		
Amounts carried forward,	$12,565.25	$122,789.81	$116,958.44

		Cash Payment.	True Cost.
Amounts brought forward,	$12,565.25	$122,789.81	$116,958.44
Two furnaces complete,	392.20		
Lumber for fence,	242.98		
Nails, bolts, and hinges,	28.50		
Building fence,	152.25		
Advertising for proposals for building,	12.00	13,393.18	13,393.18

BRIDEWELL.

Nails,	$23.75		
Building dock,	315.00		
Painting and glazing,	6.27	345.02	345.02

ARMORY.

Carpenter work,	$24.37		
Painting and glazing,	145.06		
Repairing roof,	115.45		
Repairing and Plastering,	260.00		
Ripping and sawing lumber,	3.50		
Hardware,	1.95	550.33	550.33

NORTH MARKET.

Plumbing,	$155.85		
Filling holes,	10.00		
Carpenter work,	9.00		
Painting and glazing,	79.29		
Water and gas pipe,	26.70		
Screws, hinges, nails, and bolts,	5.32		
Spouting,	78.00		
Eighty-three patent gas burners,	29.05		
Street lamp 2d precinct police station,	8.00	401.21	401.21

NORTH MARKET RAISING.

Ely & Smith, contract,	$2,110.50		
Thos. Mackin, on account contract,	5,000.00		
Inspecting,	137.50		
Labor on drain,	25.75		
Raising scale,	36.61		
Hardware,	6.71		
Carpenter work,	15.00		
Lumber,	155.57		
	$7,486.64	$137,479.55	$131,648.18

		Cash Payment.	True Cost.
Amounts brought forward,	$2,487.64	$137,479.55	$131,648.18
Gas and water in excess of receipts,	280.51		
Advertising proposals for improvements,	32.25	7,800.40	7,800.40
BRIDGE DEPARTMENT			
Carpenter work,	4,641.52		
Spikes, nails, and chain,	602.31		
Lumber,	698.48		
Tools and hardware,	21.23		
Hauling coal,	24.38		
Lard and kerosene oils,	539.06		
Lantern and lamp chimneys,	10.40		
Blacksmith work,	277.49		
Altering patterns,	19.23		
Painting and glazing,	78.62		
Screws,	8.93		
Hay, oats, and feed,	96.13		
Iron work,	16.75		
Metal reflectors for bridges,	144.00		
Service pipe Indiana Street bridge,	107.58		
Seventy-four piles,	587.32		
Freight on piles,	75.00		
Castings,	31.00		
Repairing wagon,	16.44		
Miscellaneous,	8.50	8,004.37	
Add—			
Iron from Rush Street bridge,	$501.41		
Deduct—			
Amount rec'd from town of Lake, $61.83			
Damage to bridges, 215.00	276.83	8,228.95	
	224.58		
NORTH AVENUE BRIDGE.			
Carpenter work,	5.50		
Blacksmith work,	12.79		
Coal,	20.80		
Lumber,	10.82	49.91	49.91
NEW NORTH AVENUE BRIDGE.			
Draughtsman,	$9.15		
Advertising for proposals,	8.25	17.40	17.40
Amounts carried forward,		$153,351.63	$147,744.84

		Cash Payment.	True Cost.
Amounts brought forward,		$153,351.63	$147,744.84
FULLER STREET BRIDGE.			
Draughtsman,	$9.15		
Advertising for proposals,	8.25	17.40	17.40
CLYBOURNE AVENUE BRIDGE.			
Carpenter work,	$2.50		
Hardware, $0.90, Coal, $8.40,	9.30	11.80	11.80
CHICAGO AVENUE BRIDGE.			
Carpenter work,	$7.50		
Repairs,	51.58		
Use of pile driver,	120.50		
Lumber,	63.43		
Coal, $30.20, Hardware, $2.25,	32.45	275.46	275.46
ERIE STREET BRIDGE.			
Carpenter work,	$13.63		
Lumber,	50.02		
Towing bridge to Miller's boxes,	112.00		
Coal,	30.20		
Bell, $8.00, Pump plunge, $1.50,	9.50		
Nails and spikes,	51.66	267.01	267.01
INDIANA STREET BRIDGE.			
Carpenter work,	$19.50		
Lumber,	183.79		
Two lamp posts and lamps,	58.00		
Nails and spikes,	79.42		
Repairs,	171.82		
Towing bridge to dry dock,	50.00		
Coal, $16.80, Bell, $8.00,	24.80		
Blacksmith work,	38.32	625.65	625.65
KINZIE STREET BRIDGE.			
Carpenter work,	$45.25		
Nails and spikes,	5.52		
Amounts carried forward,	$50.77	$154,548.95	$148,942.16

		Cash Payment.	True Cost.
Amounts brought forward,	$50.77	$154,548.95	$148,942.16
Coal,	34.20		
Lumber,	151.88		
Blacksmith work,	147.89	384.74	384.74

RUSH STREET BRIDGE.

Carpenter work,	$183.59		
Lumber,	174.92		
Blacksmith work,	59.73		
Painting bridge and house.	513.87		
Coal, $48.50, Repairs, $5.75,	54.25		
Stove and pipe,	14.88		
Lantern, oil, and can,	7.25		
Two wheelbarrows, $7.50, Tools, $0.60,	$8.10	1,016.59	
Deduct—			
Old iron sold,	$551.28		
			465.31

STATE STREET BRIDGE.

Fox & Howard, amount of contract,	$16,500.00		
" extra work,	946.48		
Hardware for bridge house,	5.44		
Lumber,	56.79		
Paint and putty,	8.64		
Coal,	12.40	17,529.75	17,529.75

CLARK STREET BRIDGE.

Carpenter work,	$457.93		
Lumber,	987.54		
Blacksmith and iron work,	76.90		
Castings, $1.50, Latch, $7.20,	8.70		
Nails and spikes,	52.00		
Ripping lumber, $2.75, Glazing. $0.50,	3.25		
Roofing bridge house,	6.75		
Coal,	29.20	1,622.27	1,622.27

WELLS STREET BRIDGE.

Carpenter work,	$69.51		
Lumber,	551.21		
Blacksmith work, $36.71, Signal, $3.00,	39.71		
Amounts carried forward,	$660.43	$175,102.30	$168,944.23

		Cash Payment.	True Cost.
Amounts brought forward,	$660.43	$175,102.30	$168,944.23
Castings, $24.75, Two hose couplings, $10.00,	34.75		
Tools, $4.25, Lock and glazing, $1.80,	6.05		
Repairing bridge approach,	264.10		
Repairs, $7.25, Coal, $19.60,	26.85		
Nails and spikes,	23.50	1,015.68	
Add—			
Old iron from Rush Street bridge,	$15.86		1,031.54
LAKE STREET BRIDGE.			
Carpenter work,	$163.00		
Lumber,	717.48		
Blacksmith work,	25.04		
Oil, $2.40, Signals, $7.00,	9.40		
Labor on plate, $3.00, Axe, $2.00,	5.00		
Painting bridge,	223.25		
Castings, $14.75, Hardware, $1.12,	15.87		
Coal	30.20	1,189.24	1,189.24
RANDOLPH STREET BRIDGE.			
L. B. Boomer, rebuilding bridge,	$4,879.85		
Carpenter work,	12.18		
Lumber,	99.32		
Blacksmith work,	30.33		
Bottom plate,	434.19		
Fitting stringers,	48.50		
Sign, $3.90, Repairs, $0.75,	4.65		
Coal,	25.20	5,534.22	5,534.22
MADISON STREET BRIDGE.			
Carpenter work,	$57.49		
Lumber,	275.95		
Blacksmith work,	46.57		
Castings,	52.66		
Coal, $30.20, Hardware, $1.25,	31.45	464.12	464.12
VAN BUREN STREET BRIDGE.			
Carpenter work,	$36.13		
Lumber,	199.73		
Blacksmith work,	5.05		
Amounts carried forward,	$240.91	$183,305.56	$177,163.35

		Cash Payment.	True Cost.
Amounts brought forward,	$240.91	$183,305.56	$177,163 35
Uuse of pile driver,	283.42		
Nails, and spikes,	8.50	567.03	
Coal,	34.00		
Add—			
Old iron from Rush Street bridge,	$14.01		581.04

POLK STREET BRIDGE.

Carpenter work,	$43.06		
Nails and spikes,	129.95		
Blacksmith work,	66.01		
Rope, $0.80, Painting, $1.00, Bell, $6,00,	7.80		
Coal,	31.38		
Hardware, $4.67, Lamp burners, $0.50,	5.17		
Castings,	139.57		
Lumber,	73.10	496.04	496.04

TWELFTH STREET BRIDGE.

Carpenter work,	$93.94		
Lumber,	160.61		
Towing bridge to and from dry dock,	40.00		
Use of pile driver,	117.50		
Bolts and castings,	43.18		
Bell, $8.00, Rope, $0.81,	8 81		
Repairing and caulkings,	400.38		
Hardware, $3.50, Iron pump and plunge, $11.50,	15.00		
Shaft and machine work,	25.78		
Nails and spikes,	25.18		
Blacksmith work,	8.26		
Coal,	17.40	956.04	956.04

OLD STREET BRIDGE.

Carpenter work,	$29.56		
Lumber,	72.52		
Blacksmith work, $3.50, Glazing, $2.75,	6.25		
Bell, $8.00, Coal, $17.40,	25.40		
Roofing bridge house,	13.59	147.32	147.32
Amounts carried forward,		$185,471.99	$179,343.79

		Cash Payment.	True Cost.
Amounts brought forward,		$185,471.99	$179,343.79
HALSTED STREET BRIDGE.			
Carpenter work,	$5.50		
Bell, $8.00, Nails and spikes, $2.50,	10.50		
Lumber, $8.00, Coal, $16.80,	24.80		
Ripping and sawing lumber,	4.68	45.48	45.48
ARCHER ROAD BRIDGE.			
Carpenter work,		3.00	3.00
REUBEN STREET BRIDGE.			
Carpenter work,	$3.63		
Lumber,	34.60	38.23	38.23
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners,	$2,624.97		
Salary of Secretary,	800.00		
Salary of Engineer,	1,200.00		
Salary of Assistant Engineer,	500.00		
Salary of Assistant Superintendent,	450.00		
Salaries of Clerks,	2,998.01		
Draughtsmen,	339.99		
Blank books and stationery,	252.19		
Advertising and daily papers,	412.67		
Printing, including report April 1. 1864,	301.60		
Office fixtures and repairs,	173.99		
Revenue Stamps,	63.06		
Painting and cleaning,	87.97		
Miscellaneous,	129.17	10,333.62	
Deduct—			
Expenses sundry special assessments,	$540.74		
Licenses and services of draughtsmen,	23.60		
Oil cloth sold,	5.00		
	$569.34		9,764.28
CHICAGO HARBOR.			
Dredging and inspecting,	279.60		
Removing sunken boats and vessels,	342.99		
Sounding harbor,	152.84		
Amounts carried forward,	$775.43	$195,892.32	$189,194.78

		Cash Payment.	True Cost.
Amounts brought forward,	$775.43	$195,892.32	$189,194.78
Carpenter work,	18.00		
Mud Lake survey,	10.00		
Labor on river wall,	30.00		
Repairs on wagon,	17.25		
Numbering leathers,	3.00	853.68	853.68

PUBLIC PARKS.

Trees, planting and labor on parks,	$970.73		
Sprinkling in front of parks,	213.00		
Lumber,	76.66		
Nails and staples,	10.05	1,270.44	1,270.44

HOUSE NUMBERING.

Draughtsmen making maps of streets,	$1,435.00		
Serving notices,	507.50		
Printing notices and applications,	193.30		
Drawing paper for maps,	78.75		
Clerks,	104.00		
Miscellaneous,	17.30	2,335.85	
Deduct—			
Amount received for numbers,	2,231.00		104.85

STRAIGHTENING NORTH CLARK STREET.

Damage allowed W. Barry,		60.00	60.00

INTERSECTIONS OF STREETS.

Filling intersections on Wabash Avenue,	$465.18		
Grading " Milwaukee avenue,	1,222.28		
Macadamizing " Canal Street,	974.39		
Filling and paving " West Lake Street,	9,300.00		
Graveling " North Clark Street,	988.39		
Planking " West Twelfth Street,	196.38		
Grading " Market Street, balance contract,	5.00		
Filling intersections on Kinzie and Wolcott Streets,	41.00		
Inspecting,	175.00		
Crossings at Canal Street intersections,	146.25		
Two wheelbarrows,	8.00	13,521.87	
Amounts carried forward,		$213,934.16	$191,483.75

		Cash Payment.	True Cost.
Amounts brought forward,		$213,934.16	$191,483.75
Add—			
Amount charged West Division,	$87.52		13,609.39
CANAL STREET IMPROVEMENT.			
Hervey Nash, on contract, per C., B., & Q. R. R. Co.,	21,569.74		
Inspecting,	31.73	1,601.47	
STREET LAMPS WEST DIVISION.			
Rebates on erroneous assessments,		18.90	
NORTH PIER EXTENSION.			
Advertising for proposals,		54.12	54.12
			$205,147.26
Total cash expenditures,		$215,608.65	
Balance in Treasurer's hands, April 1, 1865,		44,828.76	
		$260,437.41	

SPECIAL APPROPRIATIONS.

EXPENDITURES.

DREDGING BAR AT MOUTH OF HARBOR.

Fox & Howard, dredging,	$22,700.35		
Inspecting,	389.00	$23,089.35	$23,089.35

NORTH PIER EXTENSION.

Fox & Howard, estimates,	$27,946.16		
Sundry items,	116.70		
Inspecting,	37.50	28,100.36	
ADD—			
Advertising proposals, charged city appropriation fund,	54.12		28,154.48
		$51,189.71	$51,243.83

SPECIAL ASSESSMENTS.

WEST LAKE STREET IMPROVEMENT.

Balance unexpended, April 1, 1864,		$25,022.72
Estimates paid D. L. DeGolyer,	$16,329.18	
Inspecting,	187.50	
Raising curb wall,	91.52	
		16,608.20
Balance unexpended, to apply on expenses,		$8,414.52

CANAL STREET IMPROVEMENT.

Balance unexpended, April 1, 1864,		$846.99
Estimate paid Giles & Nash,	$649.25	
Inspecting,	168.60	
		817.85
Balance unexpended,		$29.14

MILWAUKEE AVENUE IMPROVEMENT.

Balance unexpended, April 1, 1864,		$5,782.96
Received from intersections and Cook Co.,		3,222.28
		$9,005.24
Estimates paid J. McMahon,	$5,682.31	
Services Inspector,	37.50	
		5,719.81
Balance unexpended,		$3,285.43

HOLT STREET IMPROVEMENT.

Balance unexpended, April 1, 1864,		$520.00
Damages paid,	$495.00	
Error in assessment,	8.19	
		503.19
Balance unexpended,		$16.81

FOURTEENTH STREET IMPROVEMENT.

Balance unexpended, April 1, 1864,	$20,466.97	
Land Damages paid,	14,200.00	
Balance unexpended,		$6,266.97

DREDGING SOUTH BRANCH, NEAR BRIDGEPORT.

Balance unexpended, April 1, 1864,	$3,710.00	
Advertising for proposals for dredging,	20.63	
Balance unexpended,		$3,689.37

PLANKING WEST TWELFTH STREET.

Amount collected,		$1,951.04
Lumber for planking,		1,951.04

PRIVATE DRAIN ASSESSMENT.

Amount of assessment for private drain, lot 5, block 1, Johnston, Roberts, & Storr's Addition,		$80.40
Error in assessment,	$ 31.53	
Labor done by Sewarage Department,	26.69	
		58.22
Balance unexpended,		$22.18

NORTH CLARK STREET IMPROVEMENT.

Balance unexpended, April 1, 1864,	$965.30	
Received from intersections,	988.39	$1,953.69
Abatements of tax paid,	608.81	
Land damages paid,	41.33	
		650.14
Balance unexpended,		$1,303.55

DIVISION STREET IMPROVEMENT.

Amount of assessment for widening Division Street, from Clark Street to the Lake,		$8,840.80
Land damages and abatements paid,		4,719.97
Balance unexpended,		$4,120.83

TWENTIETH STREET IMPROVEMENT.

Amount of assessment,	$37,695.00	
Land demages paid,	25.294.76	
Balance unexpended,		$12,400.24

LAMP POST ASSESSMENTS.

POLK STREET.

Balance unexpended, April 1, 1864,		$146.87
Bouton & Co., balance for ten posts,	$24.37	
Gas Co., in full, ten posts,	85.00	
F. Hartman & Co., balance, ten posts,	7.50	
Sundry expenses,	30.00	
		$146.87

JEFFERSON STREET.

Balance unexpended, April 1, 1864,		$4.47
Bouton & Co., in full, for two posts,	$4.87	
Gas Co., " " "	17.00	
F. Hartman, " " "	1.50	
		23.37
Expended in excess of assessment,		$18.90

ST. JOHNS PLACE.

Balance unexpended, April 1, 1864,		$96.00
Bouton & Co., one post,	$16.25	
F. Hartman, in full, three lamps,	12.75	
		29.00
Balance unexpended,		$67.00

JEFFERSON STREET.

Balance unexpended, April 1, 1864,		$51.12
Bouton & Co., in full, six posts,	$14.62	
People's Gas Light & C. Co., in full, service pipe, etc.,	11.00	
F. Hartman, in full, six lamps,	7.50	
Sundry expenses,	18.00	
		$51.12

MATHER STREET.

Balance unexpended, April 1, 1864,		$61.12
Bouton & Co., in full, six posts,	$14.62	
People's G. L. & C. Co., in full, service pipe, etc.,	21.00	
F. Hartman, in full, six lamps,	7.50	
Sundry expenses,	18.00	
		$61.12

FULTON STREET, BETWEEN PECK AND REUBEN

Balance unexpended, April 1, 1864,		$160.00
Bouton & Co., in full, five posts,	$81.25	
People's G. L. & C. Co., on account,	14.00	
F. Hartman, in full, five lamps,	21.25	
		116.50
Balance unexpended,		$43.50

FULTON STREET, BETWEEN SANGAMON AND MORGAN.

Balance unexpended, April 1, 1864,		$96.00
Bouton & Co., in full, three posts,	$48.75	
People's G. L. & C. Co., in full, service pipe, etc.,	25.50	
F. Hartman, in full, three lamps,	12.75	
Sundry expenses,	9.00	
		96.00

SANGAMON STREET.

Balance unexpended, April 1, 1864,		$36.37
Bouton & Co., in full, two posts,	$4.87	
People's G. L. & C. Co., in full, service pipe, etc.,	17.00	
F. Hartman, in full, two lamps,	8.50	
Sundry expenses,	6.00	
		36.37

JACKSON STREET.

Balance unexpended, April 1, 1864,		$44.75
Bouton & Co., balance, four posts,	$9.75	
People's G. L. & C. Co., balance, service pipe, etc.,	14.00	
F. Hartman, balance, four lamps,	9.00	
Sundry expenses,	12.00	
		44.75

WEST JACKSON STREET.

Balance unexpended, April 1, 1864,		$48.44
Bouton & Co., balance, five posts,	$12.19	
People's G. L. & C. Co., balance, service pipe, etc.,	17.50	
F. Hartman, balance, five lamps,	3.75	
Sundry expenses,	15.00	
		48.44

SHELDON STREET.

Balance unexpended, April 1, 1864,		$19.38
Bouton & Co., balance, two posts,	$4.88	
People's G. L. & C. Co., balance, service pipe,	7.00	
F. Hartman, balance, two lamps,	1.50	
Sundry expenses,	6.00	
		19.38

TAYLOR STREET.

Balance unexpended, April 1, 1864,		$86.31
Bouton & Co., balance, seven posts,	$17.06	
People's G. L. & C. Co., balance, service pipe for four posts,	14.00	
F. Hartman, balance, seven lamps,	8.75	
		39.81
Balance unexpended,		46.50

WEST ADAMS STREET, BETWEEN CANAL AND HALSTED.

Balance unexpended, April 1, 1864,		$267.63
Bouton & Co., balance, fourteen posts,	$34.13	
People's G. L. & C. Co., in full, for pipe, for six posts,	21.00	
F. Hartman, balance, sixteen lamps,	47.00	
		102.13
Balance unexpended,		$165.50

WEST ADAMS STREET, BETWEEN RUCKER AND MORGAN.

Balance unexpended, April 1, 1864,		$79.34
People's G. L. & C. Co., balance, service pipe,	$28.00	
F. Hartman, balance, eight lamps,	11.00	
		39.00
Balance unexpended,		$40.34

CLINTON STREET.

Balance unexpended, April 1, 1864,		$232.50
Bouton & Co., balance, twenty-four posts,	$58.50	
People's G. L. & C. Co. balance, service pipe,	84.00	
F. Hartman, balance, for twenty-four lamps,	18.00	
Sundry expenses,	72.00	
		232.50

PEORIA STREET.

Balance unexpended, April 1, 1864,		$24.38
Bouton & Co., balance, two posts,	4.88	
People's G. L. & C. Co., balance, service pipe,	7.00	
F. Hartman, balance, two lamps,	6.50	
Sundry expenses,	6.00	
		24.38

LOOMIS STREET.

Balance unexpended, April 1, 1864,		$58.13
Bouton & Co., balance, six posts,	$14.63	
People's G. L. & C. Co., balance, service pipe,	21.00	
F. Hartman, balance, six lamps,	4.50	
Sundry expenses,	18.00	
		58.13

WEST LAKE STREET.

Balance unexpended, April 1, 1864,		$454.69
Bouton & Co., balance, twenty-five posts,	$60.94	
F. Hartman, in full, twenty-five lamps,	106.25	
		167.19
Balance unexpended,		$287.50

DESPLAINES STREET.

Balance unexpended, April 1, 1864,		$150.00
Bouton & Co., balance, seventeen posts,	$55,25	
People's Gas L. & C. Co., balance, service pipe,	59.50	
F. Hartman, balance, sixteen lamps,	12.00	
		126.75
Balance unexpended,		$23.25

WARREN STREET.

Balance unexpended, April 1, 1864,		$272.22
Bouton & Co., balance, seventeen posts,	$41.43	
People's Gas L. & C. Co., service pipe,	49.00	
F. Hartman, balance, twenty lamps,	36.00	
Rebate to C. C. James,	13.96	
		140.39
Balance unexpended,		$131.83

ABERDEEN STREET

Balance unexpended, April 1, 1864,		$41.36
Bouton & Co., balance, four posts,	$9.76	
People's Gas L. & C. Co., service pipe for two posts,	7.00	
F. Hartman, balance, four lamps,	10.00	
		26.76
Balance unexpended,		$14.60

JUDD STREET.

Balance unexpended, April 1, 1864,		$48.44
Bouton & Co., balance, five posts,	$12.19	
People's Gas L. & C. Co., service pipe, etc.,	17.50	
F. Hartman, balance, five lamps,	3.75	
Sundry expenses,	15.00	
		$48.44

TWELFTH STREET.

Balance unexpended, April 1, 1864,		$96.00
Bouton & Co., in full, three posts,	$48.75	
People's G. L. & C. Co., in full, for service pipe, etc.,	25.50	
F. Hartman, in full, three lamps,	12.75	
Sundry expenses,	9.00	
		96.00

DEPUYSTER STREET.

Balance unexpended, April 1, 1864,		$29.06
Bouton & Co., balance three posts,	$7.31	
People's G. L. & C. Co., balance, service pipe, etc.,	10.50	
F. Hartman, balance, three posts,	2.25	
Sundry expenses,	9.00	
		29.06

WEST VAN BUREN STREET, BETWEEN HALSTED AND DESPLAINES STREET.

Balance unexpended, April 1, 1864,		$38.75
Bouton & Co., balance, four posts,	$9.75	
People's G. L. & C. Co., balance for service pipe,	14.00	
F. Hartman, balance, four lamps,	3.00	
Sundry expenses,	12.00	
		38.75

WEST VAN BUREN STREET, BETWEEN SANGAMON AND 175 FEET WEST MORGAN STREET.

Balance unexpended, April 1, 1864,		$32.10
Bouton & Co., balance, four posts,	$9.75	
People's G. L. & C. Co., balance, for service pipe, etc.,	14.00	
F. Hartman, balance, four lamps,	3.00	
Sundry expenses,	5.35	
		$32.10

WEST TWELFTH STREET.

Balance unexpended, April 1, 1864,		$160.00
Bouton & Co., in full, two posts,	$32.50	
People's G. L. & C. Co., in full, service pipe, &c., for five posts,	42.50	
F. Hartman, in full, five lamps,	21.25	
		96.25
Balance unexpended,		$63.75

PRICE PLACE.

Balance unexpended, April 1, 1864,		$38.75
Bouton & Co., balance, four lamps,	$9.75	
People's G. L. & C. Co., balance, service pipe, etc.	14.00	
F. Hartman, balance, four lamps,	3.00	
Sundry expenses,	12.00	
		38.75

PARK AVENUE.

Balance unexpended, April 1, 1864,		$72.75
Bouton & Co., balance, four lamps,	$9.75	
People's G. L. & C. Co., in full, service pipe,	34.00	
F. Hartman, in full, four lamps,	17.00	
Sundry expenses,	12.00	
		$72.75

HALSTED STREET.

Balance unexpended, April 1, 1864,		$130.88
Bouton & Co., balance, ten posts,	$24.38	
People's G. L. & C. Co., balance, service pipe, etc.,	55.00	
F. Hartman, balance, ten lamps,	21.50	
Sundry expenses,	30.00	
		130.88

WEST MONROE STREET.

Balance unexpended, April 1, 1864,		$237.62
Bouton & Co., balance, fourteen posts,	$34.12	
People's G. L. & C. Co., service pipe, etc.,	7.00	
F. Hartman, balance, fourteen lamps,	52.50	
		93.62
Balance unexpended,		$144.00

CARPENTER STREET.

Balance unexpended, April 1, 1864,		$54.54
Bouton & Co., balance, three posts,	$7.29	
People's G. L. & C. Co., service pipe for two posts,	17.00	
F. Hartman, in full, three lamps,	12.75	
		37.04
Balance unexpended,		$17.50

CARROLL STREET.

Balance unexpended, April 1, 1864,		$272.81
Bouton & Co., fifteen posts,	$36.56	
People's G. L. & C. Co., in full, for service pipe, etc.,	127.50	
F. Hartman, in full, fifteen lamps,	63.75	
Sundry expenses,	45.00	
		272.81

BLUE ISLAND AVENUE.

Balance unexpended, April 1, 1864,		$104.31
Bouton & Co., balance, six posts,	$14.62	
People's G. L. & C. Co., in full, for service pipe,	51.00	
F. Hartman, in full, for six lamps,	25.50	
Sundry expenses,	13.19	
		104.31

WILLARD PLACE.

Balance unexpended, April 1, 1864,		$29.38
Bouton & Co., balance, two posts,	$4.88	
People's G. L. & C. Co., in full, for service pipe,	17.00	
F. Hartman, balance, for two lamps,	1.50	
Sundry expenses,	6.00	
		$29.38

PRAIRIE AVENUE.

Balance unexpended, April 1, 1864,		$24.75
Bouton & Co., balance account, for posts,	$19.50	
F. Hartman, balance. for four posts,	3.00	
Sundry expenses,	2.25	
		24.75

EIGHTEENTH STREET.

Balance unexpended, April 1, 1864,		$83.06
F. Hartman, balance, for sixteen lamps,		12.00
Balance unexpended,		$71.06

HARMON COURT.

Balance unexpended, April 1, 1864,		$64.00
Bouton & Co., in full, for two posts,	$32.50	
F. Hartman, in full, for two lamps,	8.50	
		41.00
Balance unexpended,		$23.00

GROVE STREET.

Balance unexpended, April 1, 1864,		$80.00
Bouton & Co., in full, for three posts,	$48.75	
F. Hartman, balance, for four lamps,	3.00	
		51.75
Balance unexpended,		$28.25

MICHIGAN AVENUE.

Balance unexpended, April 1, 1864,		$22.44
Bouton & Co., balance account for posts,	$18.69	
F. Hartman, balance, for five lamps,	3.75	
		22.44

MICHIGAN AVENUE.

Amount of assessment, for eleven lamp posts, between Eighteenth and Twenty-second Streets,		$352.00
B. W. Phillips, one lamp and post,	$32.00	
Bouton & Co., in, full, for eleven posts,	264.00	
		296.00
Balance unexpended,		$56.00

WEST WATER STREET.

Amount of assessment, for lamp posts, between Kinzie and West Indiana Streets,		$224.00
People's G. L. & C. Co., service pipe for nine posts,		76.50
Balance nnexpended,		$147.50

WEST WASHINGTON STREET.

Amount of assessment, for lamp posts, between Wood and Lincoln Streets,		$128.00
Bouton & Co., in full, for four posts,		96:00
Balance unexpended,		$32.00

WEST WASHINGTON STREET.

Amount of assessment, for deficiency for lamp posts, between Wood and Lincoln Streets,		$40.00
People's G. L. & C. Co., in full, for service pipe, etc.,		34.00
Balance unexpended,		$6.00

WEST WASHINGTON STREET.

Amount of assessment, for lamp posts, between Jefferson Street, and 100 feet west of Clinton Street,		$90.00
A. E. Bishop, one lamp and post,		41.00
Balance unexpended,		$49.00

CHICAGO AVENUE.

Amount of assessment, for lamp posts, between Wolcott and Green Bay Streets,		$192.00
Bouton & Co., in full, for six posts,		97.50
Balance unexpended,		$94.50

NORTH DEARBORN STREET.

Amount of assessment for lamp posts between Maple and Division Streets,		$128.00
Bouton & Co., in full, for two posts,	$32.50	
Ira Scott, rebate,	11.08	
E. S. Wadsworth, rebate,	15.72	59.30
Balance unexpended,		$68.70

INDIANA AVENUE.

Amount of assessment for lamp posts from 60 ft. south of 25th St. to 60 ft. north of 29th St.,		$320.00
Bouton & Co., in full, for ten posts,		240.00
Balance unexpended,		$80.00

PRAIRIE AVENUE.

Amount of assessment, for two lamp posts, 250 feet north of 22d Street,		$84.00
Bouton & Co., in full, for two posts,		48.00
Balance unexpended,		$36.00

SIDEWALKS.

BONFIELD STREET.

Amount of assessment for sidewalk bet. Archer Road and Hickory Street,		$36.00
S. Bieson, constructing walk,		24.00
Balance unexpended,		$12.00

HICKORY STREET.

Amount of assessment for sidewalk bet. Mary and Deering Streets,		$87.60
S. Bieson, constructing walk,		73.00
Balance unexpended,		$14.60

ARCHER ROAD.

Amount of assessment for sidewalk, lot 4, block 21, sec. 29, 39, 14,		$74.70
B. Bartelme, constructing walk,	$26.95	
Chas. Fieldkamp, rebate,	25.25	
T. Linkenfeld, "	26.15	78.35
Expended in excess of assessment,		$3.65

MICHIGAN AVENUE.

Amount of assessment for walk 40 ft. south of River Street,		$87.00
B. Bartelme, constructing walk,		52.00
Balance unexpended,		$35.00

RIVER STREET.

Amount of assessment for walk,		$185.00
B. Bartelme, constructing walk,		150.00
Balance unexpended,		$35.00

CARL STREET.

Amount of assessment for sidewalk, sub-lots 10 & 11, Bronson's Addition,		$60.95
B. Bartelme, constructing walk,		26.95
Balance unexpended,		$34.00

NORTH LASALLE STREET.

Assessment for walk bet. Division St. and North Ave.,		$24.75
J. King, rebate,	$12.37	
B. Bartelme, constructing walk,	12.38	$24.75

SEDGWICK STREET.

Assessment for walk between Huron Street and Chicago Avenue,		$173.00
B. Bartelme, constructing walk,		152.10
Balance unexpended,		$20.90

SUPERIOR STREET.

Assessment for walk between Market and Kingsbury Streets,		$100.13
B. Bartelme, constructing walk,		$100.13

TWOMEY STREET.

Amount of assessment for walk from Sedgwick Street west to its terminus,		$54.60
B. Bartelme, constructing walk,		37.80
Balance unexpended,		$16.80

GRANGER STREET.

Assessment for walk between Wells and Sedgwick Streets,		$11.25
B. Bartelme, constructing walk,		$11.25

ELSTON ROAD.

Assessment for walk between North Avenue and Waubansia Avenue,		$382.22
Pat. O'Keef, rebate,	$11.00	
W. H. Donovan, constructing walk,	110.00	121.00
Balance unexpended,		$261.22

DIVISION STREET AND CLYBOURNE AVENUE.

Amount of assessment for sidewalk,		$32.50
B. Bartelme, relaying walk,		$32.50

GRACE AND DIVISION STREETS.

Amount of assessment for sidewalk,		$117.50
B. Bartelme, relaying walk,		$117.50

DIVISION, VINE, AND LARRABEE STREETS.

Amount of assessment for sidewalk,		$136.50
J. Johnson, relaying walks,	$8.80	
B. Bartelme, " "	127.70	
		$136.50

CHICAGO AVENUE AND KINGSBURY STREET.

Amount of assessment for walk,		$604.20
B. Bartelme, relaying walk,		$604.20

NORTH CLARK STREET.

Amount of assessment for sidewalk, lot 34, Bronson's Addition,		$24.75
B. Bartelme, relaying walk,		$24.75

MICHIGAN AVENUE.

Amount of assessment for sidewalk,		$18.00
S. Bieson, relaying walk,		$18.00

FOURTH AVENUE.

Amount of assessment for sidewalk,		$48.68
W. B. H. Gray, rebate,	$32.45	
S. Bieson, relaying walk,	16.23	
		$48.68

FOURTH AVENUE.

Amount of assessment for sidewalk,	$15.00
S. Bieson, relaying walk,	$15.00

ARNOLD STREET.

Amount of assessment for sidewalk,	$76.00
S. Bieson, constructing walk,	55.00
Balance unexpended,	$21.00

ARCHER ROAD.

Amount of assessment for sidewalk,	$70.00
R. McCabe, rebate,	$71.50
Expended in excess of assessment,	$1.50

PRAIRIE AVENUE.

Amount of assessment for sidewalk,	$69.50
S. Bieson, constructing walk,	49,50
Balance unexpended,	$20.00

McGLASHEN STREET.

Amount of assessment for sidewalk,	$89.50
S. Bieson, constructing walk,	52.00
Balance unexpended,	$37.50

MAIN STREET.

Amount of assessment for sidewalk,	$82.50
S. Bieson, constructing walk,	62.50
Balance unexpended,	$20.00

WALNUT STREET.

Amount of assessment for sidewalk,	$102.75
B. Bartelme, constructing walk,	68.75
Balance unexpended,	$34.00

WEST LAKE STREET.

Amount of assessment for sidewalk,	$276.50
S. Sawyer, relaying walk,	77.20
Balance unexpended,	$199.30

CLINTON STREET.

Amount of assessment for sidewalk,	$109.30
B. Bartelme, relaying walk,	79.30
Balance unexpended,	$30.00

POLK STREET.

Amount of assessment for sidewalk,	$15.00
E. Corning, rebate,	$15.00

WEST MADISON STREET.

Amount of assessment for sidewalk,	$195.70
B. Bartelme, relaying walk,	195.70

WEST TWELFTH STREET.

Amount of assessment for sidewalk,	$180.00
B. Bartelme, constructing walk,	160.00
Balance unexpended,	$20.00

BARBER STREET.

Amount of assessment for sidewalk,	$220.00
B. Bartelme, constructing walk,	213.75
Balance unexpended,	$6.25

ABERDEEN STREET.

Amount of assessment for sidewalk,	$59.20
B. Bartelme, constructing walk,	$59.20

CANAL STREET.

Amount of assessment for sidewalk,	$425.91
B. Bartelme, constructing walk,	361.45
Balance unexpended,	$64.46

SIDEWALK IMPROVEMENT, LAFLIN'S SUB-DIVISION.

Amount of assessment for sidewalk,	$53.90
B. Bartelme, relaying walk,	$53.90

SIDEWALK IMPROVEMENT, ASSESSORS' DIVISION.

Amount of assessment for sidewalk,	$100.00
B. Bartelme, relaying walk,	$100.00

KRAMER STREET.

Amount of assessment for sidewalk,		$32.00
B. Bartelme, constructing walk,		22.50
Balance unexpended,		$9.50

BLUE ISLAND AVENUE.

Amount of assessment for sidewalk,		$104.31
B. Bartelme, constructing walk,		73.20
Balance unexpended,		$31.11

THROOP STREET.

Amount of assessment for sidewalk,		$173.55
B. Bartelme, constructing walk,		151.80
Balance unexpended,		$21.75

MORGAN STREET.

Amount of assessment for sidewalk,		$246.35
B. Bartelme, constructing walk,		120.00
Balance unexpended,		$126.35

WEST JACKSON STREET.

Amount of assessment for sidewalk,		$46.00
F. Reid, rebate,	$11.61	
B. Bartelme, constructing walk,	23.00	
		34.61
Balance unexpended,		$11.39

WEST MONROE STREET.

Amount of assessment for sidewalk,		$67.80
B. Bartelme, constructing walk,		53.40
Balance unexpended,		$14.40

LIBERTY STREET.

Amount of assessment for sidewalk,		$46.00
B. Bartelme, constructing walk,		45.00
Balance unexpended,		$1.00

SIDEWALK IMPROVEMENT, BLOCK 19, ASSESSORS' DIVISION.

Amount of assessment for sidewalk,		$26.40
B. Bartelme, relaying walk,	$22.55	
S. W. Grannis, rebate,	4.23	
		26.78
Expended in excess of assessment,		$0.38

APPENDIX.

REPORT OF THE COMMISSION OF ENGINEERS,

APPOINTED BY THE

COMMON COUNCIL OF THE CITY OF CHICAGO,

JANUARY 9, 1865,

TO REPORT UPON THE BEST PLAN FOR CLEANSING CHICAGO RIVER.

To the Hon. Mayor and Common Council of the City of Chicago, Illinois:—

The undersigned having been duly notified that they were, on the 9th of January, 1865, appointed a board of commission to devise the best plan for cleansing the Chicago river, and having carefully considered the questions involved in this important subject, have the honor to submit the following report:—

Knowing that various modes of purifying the river had been proposed by gentlemen of intelligence, having a direct interest in the subject, we resolved to avail ourselves, as far as practicable, of their opinions. Accordingly at our first meeting, we caused a notice to be published, requesting all persons who had formed any plans for effecting the object in view to present them, with the necessary explanations. In response to this request a great number of communications were received—some of them containing valuable suggestions and showing that much thought had been bestowed upon the important questions involved.

We here desire to express our thanks to the parties who so kindly and promptly came forward to assist us in the solution of a difficult problem, and especially to those who had devoted much time to the preparation of elaborate plans and estimates.

We do not deem it necessary to discuss, in this report, the merits of the various plans and suggestions which we have considered. Suffice it to say that, at our different meetings, we have endeavored to fully and impartially consider all their various merits and defects, and to give them all the weight to which, in our judgment, they were justly entitled.

These communications more or less directly bear upon three general plans which seem to be the only ones through which the main object in view can be accomplished, to wit:—

1. Intercepting sewers which shall receive the filth that would otherwise flow into the river and carry it to the lake, to some point or points into which it would be pumped by machinery—thus keeping impurities out of the river to as great an extent as practicable.

2. Cutting canals or making covered sewers from the two branches of the river to the lake, and, by pumping works erected thereon force the filthy water out or the lake water in, thus keeping up a constant and sufficient current to keep the river pure. We do not believe that the necessary current can be produced by the natural action of the waves of the lake, as has been suggested.

3. Cutting down the summit of the Illinois and Michigan canal below the level of the lake, so that a sufficient quantity of water may be drawn from it to create the necessary current though the main river and the south branch (and perhaps, to some extent in the north branch also) to thoroughly purify the same at all times.

Without recapitulating all the arguments which have been urged for and against these three general plans, it may be sufficient to briefly state a few of the prominent advantages and disadvantages of each.

We believe the system of intercepting sewers has not been introduced anywhere in America as yet, and into but few cities of the old world, where it has scarcely had a thorough trial yet, but is said to be steadily growing in favor. It seems to us that the system is more particularly adapted to older cities, where stringent municipal regulations can be more easily carried out,

and where other facilities for getting rid of offensive matter are less available than here.

It is believed that its advantages would consist in receiving and conducting, in covered sewers, to a point or points outside of the city, the filthy contents of all the sewers that now discharge into the main river and branches, and thus prevent the water of the river, and from it the atmosphere of the city, from being polluted as at present. It would also allow the lowest districts of the city, which are now partially flooded in times of high water in the lake, to be drained better than can be done at present.

Besides the first cost of construction, upwards of $1,000,000, and the length of time, not less than two years required to carry it out, the system of intercepting sewers would be subject to the disadvantages which necessarily belong to so complicated a scheme. At the outlet it would be necessary to construct, and keep in operation night and day, pumping works, to raise and discharge into the lake the constantly increasing filth of the city. Along the river and branches self-acting gates, or valves, would have to be constructed with great care in the first place, and forever after maintained with unceasing faithfulness.

Should intercepting sewers be constructed for the purpose of receiving the discharges from distilleries, packing houses, and other establishments that have rendered the river offensive, it is to be feared that it would only remove the nuisance from the river to more vital points. The experience of the city thus far in the maintenance of its sewers shows that, while the men employed in cleaning have never been injuriously affected by ordinary house drainage, they cannot stand the emanations from substances improperly and unlawfully discharged into the sewers from packing houses or rendering establishments. It would be exceedingly difficult if not impracticable to prevent the effluvia caused by such establishments, as well as distilleries, from pervading all the sewers of the city, and causing serious complaints where no annoyances are now felt.

Should it be found best ultimately to carry out a system of intercepting sewers in Chicago, and we are by no means prepared

to say it will not, we think there would finally be a necessity for keeping up a constant current in the river, because it would be impossible to prevent the discharge of improper substances into it from the shipping, the docks, and sewers themselves, in times of heavy rain, to say nothing of what might be thrown into the north and south branches outside of the limits and jurisdiction of the city, and afterwards brought within by a sluggish current.

In regard to the second general plan, we think that there can be no doubt that it can be made to accomplish the main object desired at a less expense at the outset than any other. To do this in the most effectual way we would adopt the following specific plan, to-wit:—

An open canal from the south branch to the lake through or near Douglas avenue; length 13,700 feet, width at bottom 25 feet, at surface at low water of Lake Michigan 65 feet, and depth 10 feet. Estimated cost $547,230.

Also an open canal, of the same dimensions as above, from the north branch of Chicago river to the lake, through or near Fullerton avenue. Length 11,200 feet; and estimated cost $469,269.

These canals would have a capacity sufficient to discharge 24,000 cubic feet of water per minute, each (without raising it more than four inches), which, it is supposed, would change the entire volume of water in the river once in forty-eight hours. The machinery for pumping might be placed either upon the river or lake ends of the canals.

The advantages of this plan consist mainly in its simplicity, the comparative cheapness of construction, and the facility with which repairs could at any time be made.

Its disadvantages would be found in the constant expense of sustaining and operating the machinery, keeping the canals in repair, protecting and keeping open their entrances into the lake, and contingencies to which works of this kind are more or less liable. These can, however, be provided against in a degree, by duplicating the machinery. Another objection to both this and the intercepting sewer plan is, that all the accumulated filth of the city must be discharged within or near its limits.

The estimated cost of the third plan for purifying Chicago river, which is to cut down the summit of the canal below the level of the lake, so as to draw from it, at a low stage, not less than 24,000 cubic feet of water per minute, is $2,102,467.50.

This estimate provides for increasing the capacity of the canal somewhat over the plan adopted by the canal commissioners in 1836, so as to create a current in Chicago river which is deemed sufficient to cleanse it. The quantity of water drawn from the lake through the river would seldom be less than 24,000 cubic feet per minute, and at the average stage of water much greater.

The advantages of this plan over any other are briefly as follows:—

1. It furnishes the only possible self-acting means of cleansing the main river and the south branch (and possibly to a certain extent the north branch also), every hour of the day and every day of the year for all time to come.

2. The filth of the city which passes into the river will be drained off through the canal without contaminating the waters of the lake, and the continual current will prevent the water in the river from ever becoming very offensive.

3. The cost of construction will be the only expense to the city, as all subsequent expenses in keeping the channel open and enlarging and improving it will be borne by the State.

4. The money expended in cutting down the summit of the canal so as to procure the supply of water directly from Lake Michigan, will constitute a part of the expense of enlarging the present canal so as to admit the passage of steamboats of the largest class,—an improvement which must soon be made.

5. By using the present summit locks, or, if the canal be enlarged, constructing other locks at each end of the "deep cut" of enlarged dimensions, a large quantity of water could be accumulated at any time by filling the canal to the present surface, which could be suddenly discharged into Chicago river making a strong current to the lake. This may never be necessary, but the plan admits of the arrangement described, should it hereafter be deemed desirable.

We have mentioned the prominent advantages of the plan.

The principal disadvantages are its cost and the time which must be occupied in doing the work. The probable cost has been given. The time which would be required to execute the work economically, without seriously interfering with the navigation of the present canal, would be about three years.

But no other plan by which the river could be effectually purified could be executed in less than one year; so, for a year, at least, some means within reach must be adopted to partially remedy the evils which it is intended ultimately to entirely obviate.

It is believed that the hydraulic works at Bridgeport if worked up to their full capacity, or even so as to raise all the water which the present canal, with some slight addition to its banks, could discharge, would prevent the river from becoming very offensive if especial vigilance were exercised to keep out deleterious substances. This we deem of the utmost importance, and, in fact, indispensable to the well-being of the city until some plan of thorough drainage be carried out.

Even then, it appears to us, that the distilleries which have, at times, rendered the waters of the north branch almost putrid, and other establishments which have given Chicago a world-wide fame for its vile odors, should not be permitted to remain the nuisances which they have been. Certainly the process of thoroughly cleansing the river would be greatly simplified if no more offensive substances were discharged into it than could possibly be avoided. It would seem to be the part of wisdom as much to avoid an evil, if possible, as to cure it.

Until some plan for cleansing the river be fully completed, it should not be expected that the temporary remedies which may be resorted to will entirely prevent the water from becoming impure. They will only mitigate the evil.

The recommendation has frequently been made that the Desplaines river should be turned into either the south or north branch, and thus purify it; but at the very season when the process would be most needed there is not water enough in that river to do any good, and if there was the city has no right to take it. But it is said that that river would furnish in times of freshet

water enough to scour the south branch and main river two or three times a year so thoroughly that it could not become very offensive in the meanwhile, and would also be kept in a far better navigable condition. As a measure of satisfactory relief from nuisances in the river, we believe it would not answer the purpose. As an important aid in maintaining a suitable depth in the harbor, we think it might be made valuable; but after careful examinations and surveys we are thoroughly satisfied that the small expenditures heretofore recommended for the purpose would be totally inadequate. Some of us have had actual experience in matters of this kind, and we believe that a canal that would cost less than $100,000 would only end in disappointment. To this sum should be added whatever it might cost to dredge out deposits in the river below Bridgeport, brought in from the canal.

The commission has made the proposed survey of Desplaines river with reference to a new channel from Bridgeport to Lockport, independent of the Illinois and Michigan canal, which was referred to us by your honorable body. We have found, as was expected, very extensive deep places in the channel of the river, but notwithstanding this it would cost upwards of $1,000,000 more to make a new channel of equal size to that of the Illinois and Michigan canal from Bridgeport to the Desplaines, and thence down that stream to Lockport, than it would to deepen the present canal. The new channel after being completed would be encumbered with the drainage of the Desplaines valley; but the present canal deepened would not.

In case it should be thought advisable to construct the proposed canals between the lake and the north and south branches, the question of power to be used becomes an important one. We do not, at present, feel perfect confidence in anything but steam; but the experience of several of the railroad companies of this State in the use of wind-mills is so satisfactory, and withal so economical in first cost and maintenance, that it might be worthy of a trial, and we think it far more promising than reliance upon the action of waves, because these could only be depended upon during northerly or easterly winds, while wind-

mills could take advantage of any breeze. There is also another natural power that could be made use of, and that is a species of tide or ebb and flow occurring sometimes as often as once in ten minutes in the calmest days of summer. The cause of this ebb and flow has never been satisfactorily explained, to our knowledge, but of its existence there is no doubt, and as little that by means of self-acting gates it could be utilized for changing the water in the proposed canals, to some extent at least, if not to a sufficient one for permanent benefit.

The suggestion has been made that reservoirs could be constructed on the north branch of the Desplaines, and a sufficient quantity of water stored in them to flush the river occasionally. This could undoubtedly be done, but a slight investigation of the subject will show the impossibility of obtaining from such sources a supply sufficient to keep the river pure at all times, unless at a cost greatly exceeding other methods; and as the value of but two or three flushings during the season is so doubtful, when compared with a constant purification, we do not think it advisable to construct such reservoirs.

In view of all the facts of the case, the best plan for cleansing Chicago river that we can devise, is to cut down the summit of the canal so as to draw a sufficient quantity through it from the lake to create the necessary current in said river.

We are aware that the first cost of executing this work would exceed that of constructing short canals from the north and south branches to the lake and erecting the necessary machinery thereon. We are aware also that, theoretically, the interest on the additional cost would be more than the expense of operating said machinery. But we do not think that in deciding this question we have a right to disregard other considerations of great importance to the interests of the city, especially the law passed at the recent session of our State legislature which gives the city of Chicago a lien upon the Illinois and Michigan canal and its revenues after the payment of the present canal debt, until the whole cost of making the "deep cut" and the interest accruing thereon shall have been reimbursed to the city.

With regard to the north branch, while we consider the proposed open canal from the lake to the river along or near Fullerton avenue, the best plan to recommend for permanently cleansing it, if the discharge of filth into it must be suffered to go on as heretofore, we believe it is both the right and the duty of the city to prevent all such discharges. This would be by far the simplest, cheapest, and quickest way of purifying that branch; in fact, the only method we can think of to obtain immediate as well as permanent relief.

It has often been said within the last three years, that any effectual prohibitions of such discharges would drive the distilleries from the city and thus inflict a serious blow upon its prosperity. By an act of congress, of last year, such heavy taxes were imposed upon distilled liquors as to cause the stoppage of these distilleries last July. But one has resumed work since, and that within the last two months. As a result the north and northwestern portions of the city have enjoyed unusual freedom from nuisances, which were often before of a most abominable character, while no complaints of any injury to the general growth or prosperity of the city have been heard of.

The proposed canal on or near Fullerton avenue would cost, as already stated, about $500,000 and probably not less than $20,000 annually afterwards to maintain it, particularly if steam power should be required. It would be better for the city to pay now at least $500,000, should that be necessary, to prevent the north branch from being polluted, than to construct and maintain this canal, whatever may be the final necessity for keeping up an artificial current in the said branch. We believe the true policy of the city is to prevent all nuisances, as far as possible, from being made, and then the unavoidable ones will be comparatively easy to remedy. The proposed canal would probably encourage and increase, to a very great extent, filthy discharges into it and the river from establishments that would be, most probably, nuisances of themselves to their neighborhoods.

The present sewerage system of the city has been planned and thus far carried out at some additional inconvenience and

considerable expense, with reference to keeping the north branch as free as possible from pollution, for the purpose of avoiding the heavy expense that would otherwise be required to purify it. Up to this time there is but one sewer, and that only a few blocks long, on Chicago avenue, that discharges constantly into the north branch. The West Kinzie Street sewer discharges into it during heavy rains only. The probability is that, for many years to come, the amount of sewage it may be necessary to discharge into that branch would not be sufficient to cause offensiveness, if the establishments above-mentioned, as well as similar ones, can be prevented from discharging their filth into it.

All which is respectfully submitted.

(Signed) WM. GOODING,
R. B. MASON,
JOHN VAN NORTWICK,
E. B. TALCOTT,
E. S. CHESBROUGH,
F. C. SHERMAN,

Chicago, March 6, 1865.

AN ACT to provide for the completion of the Illinois and Michigan Canal upon the plan adopted by the State in 1836.

Whereas, It has been represented that the City of Chicago, in order to purify or cleanse Chicago river, by drawing a sufficient quantity of water from Lake Michigan directly through it and through the summit division of the Illinois and Michigan canal, would advance a sufficient amount of funds to accomplish this desirable object; and,

Whereas, The original plan of the said canal was to cut down the summit so as to draw a supply of water for navigation directly from Lake Michigan, which plan was abandoned for the time being after a large part of the work had been executed, only in consequence of the inability of the State to procure funds for its further prosecution; and,

Whereas, Under the law creating the trust, the plan of the summit division of the canal was changed, the level being raised so as to require the principal supply of water to be obtained through the Calumet feeder, subject to serious contingencies, and by pumping on to the summit with the hydraulic works at Bridgeport; now, therefore,

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That to secure the completion of the summit division of the Illinois and Michigan canal, upon the original "deep cut" plan, with such modifications and change of line, if necessary, as will most effectually secure the thorough cleansing or purification of the Chicago river, and facilitate the execution of the work, the City of Chicago, through its constituted authorities, may at once enter into an arrangement with the board of trustees of said canal with a view to the speedy accomplishment of the work.

SEC. 2. The canal shall not be constructed of a less capacity than the plan adopted by the canal commissioners in 1836, nor shall the work of deepening it be prosecuted so as to materially interfere with the navigation. By consent of the board of trustees, however, the navigation may be opened later and closed earlier than usual in former years, but it shall never be diminished to a less time than six months.

SEC. 3. It shall be lawful for the City of Chicago to enter upon and use any lands which may be necessary for the right of way for said canal, if the route should in any part vary from the present line of canal, and to take and use any materials of any description necessary for the prosecution of the work contemplated along the line thereof, the value of the same to be determined in the mode provided by the general laws of this State.

SEC. 4. The amount expended by the City of Chicago in deepening the summit division of the canal, according to the plan adopted by the canal commissioners in 1836, shall be a vested lien upon the Illinois and Michigan canal and its revenues, after the payment of the present canal debt, and the next

revenue of the canal shall all thereafter be applied to the payment of the principal and interest of the same expended in accomplishing the object of this act, until the whole amount is reimbursed to the city. *Provided*, the cost shall not exceed two and a half millions of dollars.

SEC. 5. The State of Illinois may at any time relieve this lien upon the canal and revenue, by refunding to the City of Chicago the amount expended in making the contemplated improvement and the interest thereon.

(Signed) ALLEN C. FULLER,
Speaker of the House.

(Signed) WM. BROSS,
Speaker of the Senate,

Approved Feb. 16, 1865. RICH. J. OGLESBY.

United States of America, State of Illinois, ss.—I, Sharon Tyndale, Secretary of State of the State of Illinois, do hereby certify that the foregoing is a true copy of an enrolled law now on file in my office. In witness whereof, I have hereunto set my hand, and affixed the great seal of state, at the City of Springfield, this twenty-third day of February, A.D., 1865.

{ Seal of the State of Illinois. } SHARON TYNDALE,
Secretary of State.

[U.S. 5 cent revenue stamp.]

FIFTH ANNUAL REPORT

OF THE

Board of Public Works

TO THE

COMMON COUNCIL

OF

THE CITY OF CHICAGO.

For the Municipal Fiscal Year ending March 31st, 1866.

CHICAGO:
JAMESON & MORSE'S STEAM PRINTING HOUSE, 12 & 14 LA SALLE ST.
1866.

VDLA

*Long Island Historical Society
June 5, 1911.

FIFTH ANNUAL REPORT

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For the Municipal Fiscal Year ending March 31st, 1866.

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No. 12 and 14 La Salle Street.
1866.

BOARD OF PUBLIC WORKS.

Members of the Board.

JOHN G. GINDELE, COMMISSIONER AND PRESIDENT.

FREDERICK LETZ, COMMISSIONER AND TREASURER.

ORRIN J. ROSE, COMMISSIONER.

WILLIAM GOODING, } MEMBERS ACTING IN THE BOARD ONLY ON MATTERS
ROSWELL B. MASON, } PERTAINING TO CLEANSING CHICAGO RIVER.

OFFICERS.

A. W. TINKHAM, SECRETARY.

E. S. CHESBROUGH, CITY ENGINEER.

ERRATA.

On first page of Appendix, in Water Department Trial Balance, Duncan, Sherman & Co., Coupon acc't, should read $44,485.00

COMMISSIONERS' REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, AUGUST 15TH, 1866.

To the Mayor and Aldermen of the City of Chicago, in Common Council assembled:

The Board of Public Works submit herewith to your honorable body their Report for the municipal fiscal year ending March 31st, 1866. Some of the public improvements undertaken by the city, and in progress during this period, and entrusted to our Board, are of unusual importance, and it is believed such as will contribute materially to its prosperity and to the welfare of its citizens.

The Board will remark upon the affairs of their several departments in the same order as usual, as far as practicable.

WATER WORKS.

THE SUPPLY OF WATER.

The city has been supplied without interruption during the year. During the months of January and February, however, the Board was seriously apprehensive that the basin, from whence the inlet extends to the pump-well, would be cut off from the lake by the ice packed along the shore. It was only by the most unremitting exertions, day and night, during the cold of winter, that a small channel was kept open through the accumulations of sand and ice. It is expected that the tunnel will

be finished early enough in the season to be ready for use during next winter, and that hereafter the city will be relieved from any liability to an interruption of its supply from such causes as have just been remarked upon.

The consequences to be apprehended from the temporary cessation of the supply of water are, however, so great, that the Board are now considering whether it will be prudent to rely wholly upon the finishing of the tunnel to insure the supply during the coming winter, and have directed the City Engineer to prepare plans for the extension, by tunneling under the lake, of a new inlet some one thousand feet in length.

As it seemed hardly prudent to rely solely upon the single means of supply to be furnished by the tunnel, and as the present basin can only be made reliable by reconstructing and extending it at a large expense, it was contemplated at the time the tunnel was entered upon to construct a second inlet, by tunneling which, if not needed at any other times, would be necessary when the water was shut off from the main tunnel for examination, cleansing, or repairs.

During the cold of last winter, and more particularly during the hot weather of the present summer, it was not possible, with our present engines, to pump water enough to keep up the head in the outer parts of the city. Numerous complaints were made during July, by citizens residing near the limits, in the extreme west and south, of a scarcity of water, but we had no immediate means of relief.

The Board endeavored, as far as possible, to prevent all waste of water, but the amount supplied can only be increased when the new engine is in use. As the weather has become cooler, the draught on the pipes has diminished, and complaints of an insufficient supply have ceased. It is apparent, however, that the want of water in the outer portions of the city, while the center is sufficiently well supplied, is caused mainly by the inadequacy of the supply mains. The supply mains have less capacity than is usual with cities of the size of Chicago.

The South Division receives its supply principally through a main twenty four (24) inches in dimeter.

The West Division through one main sixteen (16) inches in diameter, and one twelve (12) inches in diameter from the South Division.

The North Division through a twenty-four (24) inch main, out of which are supplied the sixteen (16) inch main for the West Division, and also a twelve (12) inch main extending through the South Division and connecting with the West Division.

The Board recommend that, during the present year, we be authorized to devise a system of mains of enlarged capacity, and that the pipes be procured and laid without unnecessary delay. The tunnel, the new engine, and the new engine house, with its standing column, being finished and in use, the next work to be undertaken, the Board believe to be a system of enlarged mains, which will add to and equalize the supply in all parts of the city.

The quality of the water has been almost always good during the past year. It has been seldom affected by impurities from the river, and then only for a very limited time.

THE NEW ENGINE.

At the time of rendering our last Annual Report, preparations had been made for increasing the pumping power by the erection of another engine of greater capacity than either of the two then in use. Designs and specifications had been prepared by Mr. Cregier, the engineer in charge of the pumping works, and these designs had been approved by engineers who had been consulted, including some having as high a reputation as any in the country. The power as proposed was such as to be sufficient to pump eighteen million (18,000,000) gallons of water in twenty-four hours, under a head of one hundred and twenty-five (125) feet, with a pressure of steam of twenty-five (25) pounds to the inch. The average daily consumption of last year amounted to 7,610,459 gallons, and the greatest amount pumped in any one day to the present time, to 11,610,864 gallons.

July 20th, 1865, bids were received for the construction and erection of this new engine. The lowest bid was that received from Geo. W. Quintard, Esq., the proprietor of the Morgan Iron Works, New York City, who furnished both of the pumping engines now in use at the Water Works. The price was $107,000 and the government tax, amounting in all to $112,350. As speedily as the requisite authority was obtained from you, the Board closed the contract with Mr. Quintard on the terms just stated, and the work has been in progress ever since. At the date at which we now address you, the larger portion of the machinery has been finished and shipped—some two hundred tons being now on the way from New York.

The circular curb of brick masonry, which is to constitute the well chamber, and which is to receive the foundations for the engine, has been

sunk very nearly to the requisite depth, and the work of laying the stone foundation within it for the engine will be speedily commenced.

This curb, of some thirty-seven (37) feet in diameter, and twenty-four (24) feet in height, with the manner of sinking it into place within a few feet of the foundations of the old building and pump well, so as not to disturb them, is a work of enough general interest to be described more particularly. As it belongs, however, to the doings of the present year, and the work being now in progress, it may properly be spoken of in our next report.

The work of putting up the new engine will commence as soon as the foundations are ready, and it is believed it will be in place and in operation before the close of the present calendar year.

NEW ENGINE HOUSE.

The erection of a new engine, made necessary the enlarging of the present engine house, or the building of a new structure. Apprehensive that the construction of a new pump well, so as to adjoin the present building with its pump well and machinery, might unsettle the foundations of the building or engines, and so interrupt their working, the Board at first concluded to erect a building wholly separate from the present one, and at some distance from it, and finally, after the new engine shall have been erected, to remove the engines now in use to it.

The prolonged examination of the subject which ensued, and the expedients for the construction of the new pump well proposed in the course of this examination, led the Board to finally conclude to erect a new engine house so as to include the site of the present one leaving the old pump well and engines as they now are. As already stated, the masonry curb enclosing the new pump well is now very nearly in place, without injury to the old foundations. Plans have been determined upon for the new building. It will be conveniently arranged, and be large enough to accommodate all the pumping machinery required for many years, and at the same time its appearance will be imposing and attractive.

The new tower, to stand immediately in front of the engine house and some ninety-three feet west of it, has already been contracted for. The pile foundation is to be made by Mr. O. B. Green, at a cost of about $2,100; and the construction of the tower, excepting the pile work, has been let

to Mr. Aug. Wallbaum, for $55,000. The work is required to be completed early next year.

The architectural designs for the tower and building were prepared by Mr. W. W. Boyington. They will be structures with more than usual architectural beauty, and as they will necessarily be very conspicuous, it is the intention of the Board to make them, with their surrounding grounds, pleasing in appearance and ornaments to the city, without, however, to any degree sacrificing their suitableness for the purposes for which they are to be used.

As the planning and locating of the new structures to which we have referred progressed, it became evident that the lot on which the pumping works was located, and whose surface was almost wholly covered with buildings and materials of one kind or another, was too small and cramped for the necessities of the water works.

A favorable opportunity, as the Board believe, having been offered for a purchase by the city, of the lot in front of the engine house, and extending west from Pine street one hundred and eighty-seven and one-fourth (187¼) feet, the Board recommended to the Council its purchase.

The recommendation was approved by your honorable body, and the purchase has been made of Mr. Wm. Lill, at the price of $40,000; payable $10,000 April 16th, 1867, and $30,000 March 13th, 1868.

This addition to the grounds of the pumping works will greatly improve their appearance, and promote their convenience and usefulness.

TUNNEL UNDER LAKE MICHIGAN.

While our last Annual Report was in process of publication, the crib for the protection of the shaft to be sunk at the outer end of the tunnel, two miles from the lake shore, was successfully launched, towed to its proper position in the lake, and sunk. This was on the 25th of July. The work of filling it with stone commenced immediately, and was continued through several weeks. The crib was afterwards built up some three feet higher, so as to be secure from the wash of the waves, and the whole was covered by a building for the protection of the workmen and the materials and machinery to be gathered there. The seven iron cylinders, making the iron part of the shaft, and sixty-three (63) feet of it in height, were one by one connected and lowered to the bottom of the lake, within the thirty feet open space in the center of the crib. In the next to the upper of these cylinders, are the gates or valves by which

the water will be let in to and shut out from the tunnel. The cylinders were then, after having been brought to exactly the right position, forced downwards into the clay some twenty-five feet, the water being wholly excluded. The masonry was then commenced. In the meantime the engine for hoisting, and the necessary machinery, were made ready, and the bricks and cement and other materials and supplies, which were expected to be required during the winter, were collected and stored at the crib. A much longer interval of time was taken up in these various operations than was expected, so that it was as late as the first day of January of this year when the shaft had been constructed and the work was fairly begun in the tunnel proper. Since then, the work from both shafts has progressed uninterruptedly, excepting when strikes have arisen among the workmen; and they were of short duration.

The crib, since it was sunk and loaded, has been thoroughly tested with violent storms, and during the winter by the moving fields of ice. It withstood the shocks, both of the storms and the ice, without injury, and the least movement of it, since it was fairly loaded, has not been discovered.

The material through which the tunnel is being constructed was found to be of the same character at the outer shaft as in the inshore part of it—a stiff, hard clay.

At the date of this report the inshore part of the tunnel has progressed 7,160 feet, and the outer part 1,725 feet, leaving yet to be done of the two miles, or 10,560 feet, 1,675 feet. It is expected that the two parties will meet about 8,300 feet out from the shore shaft, and near the first day of November.

After the parties shall have met and their work be connected, the different chambers used in the construction of the work, for turn-outs and making mortar, &c., will require to be filled up, and the tunnel at such points be made uniform with the rest, and finally it must be thoroughly cleansed throughout. It is expected that it will be ready for use the latter part of December.

WATER PIPES LAID.

About the usual amount of distributing water pipes have been laid, but the expense has been very great. The total amount laid was 73,494 feet, or $13\frac{1354}{5280}$ miles, costing $146,332.23.

The following table will show how largely the cost has exceeded that of other years:

COST, PER RUNNING FOOT, OF DISTRIBUTING PIPES LAID FOR SEVERAL SUCCESSIVE YEARS.

YEARS.	AMOUNT LAID.	TOTAL COST.	COST PER RUNNING FOOT.
1861.	13,761 feet.	$12,008.00	about .87¼
1862.	50,881 "	39,197.00	" .77
1863.	68,691 "	75,241.00	" 1.09½
1864.	62,657 "	104,828.00	" 1.67¼
1865.	73,494 "	146,332.23	" 1.99

The demands made upon the Board the present year, for the extension of the pipes, are altogether beyond our means for meeting them. Contracts have been made with Messrs. T. G. Gaylord & Co., of Cincinnati, Ohio, for three hundred (300) tons of pipes, and with Messrs. R. D. Wood & Co., of Philadelphia, for one hundred and twenty (120) tons. These pipes will commence arriving early next month, but are not enough to lay one-half the amount needed.

The pipe laid was distributed in the three Divisions, as follows:

South Division, - - - - -	19,709 feet.
West Division - - - - - -	36,105 "
North Division, - - - - -	17,680 "
Total, - - - - - -	73,494 feet.

Or 13 miles and 4,854 feet.

There are now laid in the city, of pipes of all sizes, including the supply mains, 145 miles and 3,069 feet.

COST OF ADDITIONS TO THE WATER WORKS DURING THE FISCAL YEAR.

13$\frac{4844}{5280}$ miles of distributing water pipes, - - -	$146,332.23
Tunnel under Lake Michigan, - - - - - -	230,220.08
New well chamber, - - - - - - - - -	3,959.95
New engine, - - - - - - - - - -	32,242.03
New engine house, - - - - - - - - -	167.18
Total cost of additions to works during year, -	$412,921.47

WORKING EXPENSES, REPAIRS AND INTEREST.

Interest, including $326,476 charged over from discount acc't	$90,982.51
Expenses at the pumping works,	44,245.32
Improvement of the west and north reservoir grounds,	2,595.51
Repairs of pipes, &c., and miscellaneous operating expenses,	41,345.83
Water meters,	2,845.86
Salaries, office expenses, and all expenses for assessing and collecting water rents,	19,960.98
Total cost, for fiscal year, of interest and expenses,	$201,976.01

INCOME.

Water rents collected, deducting $59.50 refunded,	$252,440.62
Profits tapping pipes,	673.87
Total income for the year,	$253,114.49
Excess of income over interest and expenses,	$51,138.48
Increase of income of last year over that of year preceding it,	$28,211.92
Increase of interest and expense for same time,	$28,381.04

WATER METERS.

At the close of the fiscal year there were in use the following meters, all of the Worthington patent:

⅝ inch discharge,	31
1 " "	52
2 " "	43
3 " "	21
Total of all sizes,	147

The amount of water measured by these meters was 270,843,000 gallons, and the revenue derived from this amount of water was $39,081.00, an average price of something less than one and one-half (1½) cents per 100 gallons. An erroneous impression has prevailed to some extent that the Chicago meter rates are higher than usual. They are, on the contrary, much lower than of most other large cities.

The Boston meter charge is, for instance, three cents per 100 gallons, or double the average rate of this city

We give below the Chicago meter rates for water.

METER WATER RATES, COMMENCING JAN. 1ST, 1863.

Bills must be paid monthly. The amount of water used in any one month will determine the price to be paid for that month.

If the water used during a month amounts to 200,000 galls. or less, the rate will be 20 cents for each thousand galls.

If the water used during a month amounts to 1,200,000 galls. or more, the rate will be 10 cents for each thousand galls.

The prices of all monthly amounts between 200,000 galls. and 1,200,000 galls., will rise uniformly from $40, the price of 200,000 galls., to $120, the price of 1,200,000 galls. as shown below.

MONTHLY AMOUNTS.		PRICES.
For	200,000 gallons,	$40
"	300,000 "	48
"	400,000 "	56
"	500,000 "	64
"	600,000 "	72
"	700,000 "	80
"	800,000 "	88
"	900,000 "	96
"	1,000,000 "	104
"	1,100,000 "	112
"	1,200,000 "	120

To get the price of any odd number of gallons between 200,000 and 1,200,000, multiply the excess of the number of thousands over 200 by 8 cents, and add the product to 40.

One advantage has been found to result last year from the use of meters, which is the suppression of waste. Wastes of water, amounting to over 20,000,000 gallons of water were thus detected and suppressed, and over $4,000 collected on account of the same.

WATER LOAN BONDS.

There were outstanding, March 31st, 1865—

Six per cent bonds, - - - - - -	$1,030,000.00
Seven per cent. bonds, - - - - - -	629,000.00

These bonds are of several issues, those earliest maturing falling due July 1st, 1874, amounting to $100,000, and the balance during various years, from 1877 to 1890.

There is legislative authority to issue, in addition to the bonds outstanding as stated above, $161,000. Under the authority given by the Council, these bonds have already been issued, and in part sold, since March 31st, last.

COST OF THE WORKS.

The cost of the Water Works, not including the Lake Tunnel, the new Engine, the new Pump Well, and Engine House, amounted, March 31st, 1865, to - -	$1,528,067.50
Expenditures on new engine, same date as above, -	32,242.03
" " engine house and well chamber, -	4,127.13
" on lake tunnel to same date, - - -	339,528.94
Total cost of the works, not including supplies on hand,	$1,903,965.60

MEANS BY WHICH THE WORKS HAVE BEEN PAID FOR.

Six per cent. bonds, $1,030,000.00, less by discount, 53,868.32, - - - - -	$976,131.68
Seven per cent. bonds, - - - - - - - -	629,000.00
Amount overdrawn from city treasury, - - -	72,194.87
Balance obtained from surplus of water rents, - -	226,639.05
Total, - - - - - - - - -	$1,903,965.60

GROSS INCOME.

The total income from the time the works were first in operation, has amounted to - - - - - -		$1,603,802.44
The total expenses and repairs, and interest, for the same time, has cost as follows:		
Expenses and repairs, - - -	$586,133.24	
Interest, - - - - - -	729,037.41	$1,315,170.65
Total surplus revenue over expenses and interest, - -		$288,631.79

This surplus has been invested as follows:

Used in part payment for Water Works, -		$226,639.05	
Expended in purchase of supplies on hand, viz.:			
For coal, - - - -	$10,915.88		
Cast iron pipes, - -	29,214.53		
Stock at engine house & machine shop,	4,575.25		
Miscella'ous stock on hand,	16,359.10		
Brass service cocks, - -	927.98	$61,992.74	$288,631.79

SEWERAGE WORKS.

There have been no important changes in the Sewerage Works, save in the construction of about the usual amount of new sewers.

The sewers are in good repair, and the system of sewerage continues to accomplish all that has been expected of it, and to drain successfully both the surface of the streets, wherever the sewers are extended, and the buildings and lots connected with them.

The amount of sewers laid last year, their cost, and their distribution in the divisions of the city, are as follows, viz.:

South Division,	6,989	feet,	costing - - -	$31,529.92
West "	14,183	"	" - - - -	71,206.15
North "	8,776	"	" - - -	34,906.95
Total, -	29,948 ft., or about 5¾ miles,		costing	$137,643.02

A large amount of sewerage work contracted for last year remained undone at the close of the season, and is being executed this year. The sewers thus contracted for but not laid, in lineal feet would measure, for the three divisions, the following amounts:

South Division, - - - -	7,368 feet.
West Division, - - - - -	9,260 "
North Division, - - - -	1,500 "
	18,128 feet.

The whole length of sewers now laid in the city amounts to 75 miles and 662 feet.

The repairs for the year cost $7,493.56.

The cleansing of the sewers and catch basins cost $13,818.07.

PRIVATE DRAINS.

An unusually large number of private drains have been laid during the year, connecting private lots with the public sewers. These drains are laid at private expense, but they are all inspected by officers of the Board, and their work made to conform to the prescribed rules of the Board. They are also surveyed and platted on the maps of record preserved in this office.

The number of permits issued during the year was more than one-third of the entire number issued for all previous years.

In the Appendix will be found the rules adopted by the Board for the laying of private drains.

EXPENSES, REPAIRS, AND INTEREST.

Interest on Sewerage Loan Bonds,	$78,817.90
Sinking Fund, amount set aside of tax of 1864,	18,439.57
Salaries, office and miscellaneous expenses,	10,535.83
Repairs and cleaning sewers, as above,	21,311.63
Amount of tax of 1864, erroneously credited sewerage fund and refunded,	1,023.92
	$130,128.85

SEWERAGE LOAN BONDS.

Six per cent. bonds outstanding March 31st, 1865,	$87,000.00
Seven " " " " " "	1,149,000.00
Total sewerage debt at close of fiscal year,	$1,236,000.00

The three several loans authorized by the Legislature have amounted to $1,500,000. The $264,000.00 difference between this amount and the amount of outstanding bonds as above, is accounted for as follows, viz.:

In the hands of the Board, and since turned over to the Comptroller, for sale,	$10,000.00
Remaining to be issued this year, according to Council order of June 18th, last,	136,000.00
Bonds purchased by sinking fund, and canceled,	118,000.00
	$264,000.00

Excepting for the $146,000.00 of bonds specified above, there is no further authority to make a sewerage loan. These bonds will pay only for sewers already contracted for, to be constructed this year and next spring. For any further extension of the sewers, means must be provided hereafter.

It seems to the Board a proper time to consider whether it is well to rely wholly upon the sale of bonds for the constructing of sewers, and to go on adding, year by year, largely to the sewerage debt, as has been the case for many years, or to provide for their cost in some other way. The establishment of the system was, at the outset, a general sanitary necessity, and now that it is in operation, its benefits extend in a greater or less degree to all the citizens, even though the sewers may not run in front of every door; for the drainage system of to-day, carrying off the waste and refuse of the crowded parts of the city, and including within its reach the greater part of the business establishments, and the principal part of the population, operates to improve the health of the city as a whole, and to give, for residence and the transaction of business, in its improved streets, its well drained cellars and basements and better buildings, and in many other ways, advantages which affect the prosperity of the city as a whole, and which benefit all its citizens. It seemed proper in providing for the *establishment* of the system, to create a debt binding upon the whole city; but the system having been fairly set in operation, and its benefits extended to the business part of the city, and a greater part of the population, it would seem that the sewers afterwards laid might be dealt with as other special improvements, perhaps to be paid for in part by general tax upon the whole city, and in part by special tax on the property immediately benefited.

We do not now desire to recommend any particular way of providing for their cost. We respectfully invite your attention to the subject, that such course may be pursued as seems to your honorable body best.

It may be noticed here, properly, that the amount from the annual sewerage tax required for interest and sinking fund, on account of the increase of the sewerage debt, has been getting to be so large as to approximate towards the entire cost of the sewers built during the year.

We give, as a matter worthy of note, the amount of the sewerage interest and sinking fund, for several years, and the cost of sewers constructed during the same years.

YEARS.	INTEREST AND SINKING FUND.	CONSTRUCTION OF SEWERS.
1861	$78,228.82	$3,617.31
1862	80,793.33	57,264.51
1863	83,499.98	169,299.29
1864	91,555.60	87,221.48
1865	97,257.47	137,643.02
	$431,335.20	$455,045.61

It is evident from the above table that if the debt continues to be increased at the rate of $500,000.00 every three or four years, as will be necessary if the sewers are to be paid for by the issue of bonds, the tax for the interest and sinking fund will soon become as burdensome as would be a general tax for the construction of the sewers.

SEWERAGE SINKING FUND.

The condition of this fund is as follows, viz.:

Balance in hands of City Treasurer, March 31st, 1866, -	$711.12
Due from the sewerage tax of 1865, - - - - -	21,033.85
Mortgage due January 1, 1864, and unpaid, - - -	5,867.10
Am't of sewerage sinking fund, not yet invested in sewerage bonds, - - - - - - - - - -	$27,612.07

There have been purchased and canceled, of sewerage bonds altogether, $118,000.00, of which amount $18,000.00 were purchased and canceled the past year.

CLEANSING CHICAGO RIVER.

It was stated in our last report that the Board, including the special members, Messrs. Gooding and Mason, had adopted as their plan for the permanent cleansing of the river, or more precisely for the cleansing of the main river and South Branch, the deepening of the Illinois and Michigan Canal between the Bridgeport lock and the lock this side of Lockport, a distance of twenty six miles, so that there shall be a continuous movement of the water of the river through the canal, at the rate of 24,000 cubic feet per minute, at a low stage of water in the lake.

The plan having been approved by the Council, the Board caused the necessary surveys to be made, and made arrangements for entering upon the work as speedily as possible. A formal request was addressed to the Board of Trustees of the Illinois and Michigan Canal, asking that authority might be granted to the city to deepen the canal in the manner proposed, and that the water might be let off from the canal, from the 15th of November to the 15th of April, of each year, during the progress of the work. The Canal Trustees responded, granting the request under certain conditions, except that the time for opening the canal in the spring was set at April 1st instead of April 15th, the terms of the grant being set forth in their resolution of September 4th, 1865, a copy of which, as far as necessary for your information, we give herewith :

"The Board of Trustees of the Illinois and Michigan Canal, after full "consideration of the interests involved in the important measure thus "proposed, hereby *Resolve*, to give, and by these presents do give their "assent to the proposed enlargement of said canal between Chicago "River and Lockport, in the general manner indicated in the accompa-"nying form of contract received from the Board of Public Works of "Chicago, before referred to, and upon the following conditions, viz. :

"*First.*—For the purpose of securing the unobstructed use of the "canal, while the same is open for navigation, the Board of Trustees "reserves to itself the power to make such regulations, from time to

"time, during the work of enlargement, as it may deem necessary for "the object stated, including therein the right to cause any dredge, "scow, crane, or other machinery used in the work of enlargement, to "be removed whenever, in the opinion of the General Superintendent "of the canal, such dredge, scow, or other machinery interferes with the "free navigation of the canal.

"*Second.*—Neither of the locks at the Summit Level (Bridgeport and "Lockport), nor the Hydraulic Works, nor the appurtenances thereof, "shall be removed, or excavated upon, without the previous assent "thereto, in writing, of the Board of Trustees.

"*Third.*—In consideration of the pecuniary advantages which the "canal will derive from the proposed enlargement, the Board of Trustees "consent to close the canal, and allow the water to be drawn off, on the "15th day of November in each of the years 1865, 1866, and 1867; "and they further consent that the water may remain drawn off and the "canal be closed until the first day of April in each of the years 1866, "1867, and 1868, without charge to the City of Chicago for compensa- "tion for lost tolls for any part of the period embraced within the dates "mentioned (15th November and 1st April): *Provided*, always, that "the work of enlargement be steadily and diligently prosecuted by said "City of Chicago in good faith.

"*Fourth.*—In case the City of Chicago should desire the canal to be "closed earlier, or opened later, than the periods named in the last para- "graph, for the purpose of expediting the work of enlargement, the "Board of Trustees will consent to such an arrangement upon payment "by said City, annually, to the Board of Trustees, the average amount "of money actually received for the corresponding period of time during "the preceding ten years (1855 to 1864, inclusive): *Provided*, the time "for opening the canal be fixed not later than the 1st May, and the time "for closing be not earlier than the 1st November, in any one year.

"*Fifth.*—So far as the Board of Trustees have the right to the use "and the control of the 'ninety feet strip,' so called, on both sides of the "canal, the same may be used, if unoccupied, for the deposit of exca- "vated material (spoil bank), except in such cases as the General Super- "intendent of the canal may consider it necessary, or expedient, to "reserve the same for canal uses, or for safety, generally; excluding, "also, such portions of the 'ninety feet strip' as may have been leased "to individuals for a term of years by the Board of Trustees."

September 2d, bids were received for the doing of the work, and after some delay, for reasons already explained to you, contracts were executed with Messrs. Fox, Howard & Walker for the construction of sections Nos. 1 to 44, inclusive, of the canal in its deepened form, at the price of thirty-three (33) cents per cubic yard for the earth work, and two dollars per cubic yard for the rock excavation; and with Messrs. Sanger, Steele & Co. for the construction of sections Nos. 45 to 64, inclusive, (sections of rock excavation exclusively,) at the price of one dollar sixty-four and three-fourths cents ($1.64¾) per cubic yard for the rock work. These two contracts cover the whole work. The time stipulated by Sanger, Steele & Co. for the completion of their contract, is April 1st, 1868, and by Fox, Howard & Walker, September 1st, 1868, about two years from the present time.

It was expected that on the work on the sections let to Messrs. Sanger, Steele & Co.—the rock sections—considerable progress would be made through the winter. In this, however, the Board were disappointed. The interval of time between the letting of the contract and winter was very short for the procuring and setting up of the machinery required, and for the building of the necessary dams and protecting works, and the preparations which were thus made were insufficient for keeping out the water, so that the winter passed with but little advance made, except in the experience gained as to what will be needed another winter. As will be observed by the resolution of the Canal Trustees, it is agreed that the canal shall be closed during the work of deepening, without cost to the city, on the 15th of November of each year. For the present year, the Board being desirous of giving to the contractors for rock work as favorable an opportunity as possible for starting the work, have bargained with the trustees for the closing of the canal one month earlier than the stipulated time, the city to pay for lost tolls the average amount received during such period for the ten years 1855 to 1864, or, as estimated, $20,826.13. It is deemed by the Board very important that the work should be urged forward with all practicable despatch.

Messrs. Sanger, Steele & Co. inform the Board that they will be prepared to prosecute their work vigorously, as soon as the water is let out of the canal, and to complete it within the time specified in their contract.

On the earth sections, Messrs. Fox, Howard & Walker are getting fairly to work, and have now in the canal eight dredges doing effective service. It will be necessary to increase their number considerably in

order to accomplish the work within the contract time, and this we are assured will be done.

In order to avail ourselves of the pumping at Bridgeport, from the river into the canal, for keeping the river clean during the deepening of the canal, and for the purpose of working the machinery at its full capacity, the Board, early last year, requested the Canal Trustees to add to their pumping works another set of boilers.

The request of the Board was complied with, and although we had no occasion to avail ourselves of the works last summer, as the river was kept sufficiently clean by the frequent rains, the benefits from their use during the present season have been very manifest. The pumps were set in motion the latter part of last June, and the river since then, excepting the North Branch, has been kept in good condition and free from offensiveness.

The agreement with the Superintendent of the canal, Mr. W. A. Gooding, is, that the city shall pay for pumping the extra expense caused by it, allowance being made for what would be needed to supply the canal with water.

CHICAGO HARBOR.

No large amount of work has been done during the year at the entrance of the harbor. The pier extended the year previous withstood well the storms of winter, and early in the summer of 1865, the outer end was built up and finished, and the pier made of uniform height.

The Board have kept watch by careful soundings of the channel from time to time. The soundings disclose that a bar has already begun to form at the outer end of the pier, and show that it should be extended without delay. An appropriation has been made by the United States for the security of Chicago harbor, and it is understood that the work of extending the pier and dredging the channel is at this time being contracted for, under the direction of Major J. B. Wheeler, the U. S. Engineer having the charge of this harbor.

Within the river a considerable amount of dredging was done, removing what was called "Goose Island," at the junction of the North and South Branches with the main river; and also in the upper part of the South Branch in opening a channel fifty feet wide at the bottom, and ten feet deep below standard low water.

For many months a survey has been in progress, under order of the Council, for the establishment of the dock lines along the river and branches, from the city limits to the mouth of the harbor. It is a laborious and expensive work, and its results will be brought to your notice as speedily as possible.

STREET WORK.

The work of the past fiscal year has been one rather of preparation than of execution. As will be seen by the following lists, the amount of street and alley improvements, by special assessments, is unusually large, and the burden on the property owners proportionately heavy.

The work includes some of the most important thoroughfares of the city. Most of it is being done this year, and is now in progress.

The Board propose to gradually extend the system of street improvements from the central and business parts of the city outward, as we shall be authorized by the Common Council. It is hoped that it is already apparent to the citizens, that the streets, especially the more important business streets, are to-day in better state than they have ever been before. The Board take pleasure in remarking that the scavenger system adopted by the Police Board, and their enforcement of the ordinance against the depositing of rubbish, &c., in the street gutters, have greatly aided the Board in the work of cleansing the streets.

A strict enforcement of the ordinance so that there shall not be suffered to be any deposits in the streets of ashes, sweepings and other refuse from the buildings fronting on them, will enable the Board to keep them in a cleanly state much more cheaply and easily than now.

A most important decision as regards this city, in relation to assessments for improvements of streets occupied by railway tracks, was rendered during the year, by the Superior Court. The decision is in substance that Railway Companies, so occupying streets, are, in common with other parties whose property is benefited, subject to assessment for their share of the benefits resulting from the paving, or otherwise improving such streets. The suit in which this decision was rendered, has been appealed to the Supreme Court, and the Board are now awaiting the result of the appeal, before proceeding with the improvement of any streets occupied by railway tracks.

THE STREETS AND ALLEYS ORDERED IMPROVED FROM APRIL 1ST 1865 TO APRIL 1ST, 1866.

THE FOLLOWING STREETS HAVE BEEN ORDERED CURBED WITH CURB WALLS FILLED, GRADED AND PAVED WITH WOODEN BLOCK PAVEMENT.

Wolcott Street, between Kinzie and Michigan Sts. Completed.
Wabash Avenue " Randolph and Twenty-Second Sts. Completed from Randolph to Adams Sts.
Michigan Street, between Cass and Clark Sts. Completed.
Dearborn " " Madison and Monroe Sts. Completed.
West Randolph Street, between Halsted and West Water Sts.
South Water " " Clark and Franklin Sts. Completed.
North Clark " " Chicago river and Chicago Avenue.
West Madison " " Halsted St. and Bridge.
South Water " " Michigan & Wabash av. Completed.
North Wells " " Chicago River and Kinzie St.
Calhoun Place, block 56, original Town.
La Salle Street, between Washington and Madison Sts.
Van Buren " " State St. and Chicago River.
Wells " " Van Buren and Taylor Sts.
Wells " " Madison and Van Buren Sts. Completed.
Wells " " Lake and South Water Sts.
Van Buren " " State St. and Michigan Avenue.
Canal " " Madison and Lake Sts.
Monroe " " State St. and Michigan Avenue.

THE FOLLOWING STREETS AND ALLEYS HAVE BEEN ORDERED FILLED, GRADED AND PLANKED.

Alleys block 142, School Section addition. Completed.
Calhoun Place, between Dearborn and State Sts. Completed.
Couch Place, " Wells and Franklin Sts. "
Court Place, block 37, original town. "
Alley block 27, School Section addition. "
Alley in South part of block 43, School Section addition.
West Twelfth St., between Beach and Canal Sts. Completed.
Alley South ½ block 7, Fort Dearborn addition.
Alley block 3, Wolcott's addition.

Alley blocks 103 and 104 School Section addition. Completed.
Couch Place, between Dearborn and Clark Sts.
Alley block 12, Butler, Wright & Webster's addition.
Lumber St., from lot 1, block 4, sec. 21, to C. P. & F't.W.R.R.
Couch Place, between Franklin and Market Sts. Completed.
Benton Place " State St. and Wabash Avenue. Completed.
Alley block 14, Wolcott's addition.
Alley " 11, " "
Alley " 8, Brainard & Evans' addition.
Alley " 2 and 23 School Section addition.
Alley " 30, Wolcott's addition.
Alley " 70, Russell, Mather & Roberts' addition.
Alley " 35, Wolcott's addition.
Alley " 129 and 130 School Section addition.
Alley " 11, Fractional Section 15 addition.
Alley " 4, Fort Dearborn addition. Completed.
Alley " 27, Sec. 17, T. 39, N. R. 14 E.
Alley " 62, Sec. 7, T. 39, N. R. 14 E.
Alley " 14, Sec. 17, T. 39, N. R. 14 E.
Alley N. ½ block 27, Wolcott's addition.
Alley block 5, Kinzie's Addition.
Alley " 10, Wolcott's Addition.
Haddock Place, block 20, original town.
Alley blocks 21 and 30, Sec. 17, T. 39, N. R. 14 E.
Alley " 35, Carpenter's Addition.
Alley between 18th & 20th Sts., and between State St. & Wabash Av.
Alley block 9, Wolcott's Addition, and block 14. Kinzie's Addition.
Court Place, between La Salle and Wells Sts.
Alley blocks 6, 7, 9 and 12, Delevan's Addition.
Alley " 33, Sec. 21, T. 39, N. R. 14 E.
Alley N. ½, block 53, Sec. 7, T. 39, N. R. 14 E.

THE FOLLOWING STREETS HAVE BEEN ORDERED GRADED AND MACADAMIZED.

Chicago Avenue, between Clark St. and the Bridge.
Canal Street between Adams and Twelfth Sts.
Division " " Clark and Wolcott Sts.
Wolcott " " Division and Schiller Sts.
Wolcott " " Michigan and Indiana Sts.

North Desplaines Street, between Lake and Fourth Sts.
North Jefferson " " Lake and Hubbard Sts.
Halsted " " Archer Road and Thirty-First St.
Halsted " " Thirty-First St. and Egan Avenue.

THE FOLLOWING STREETS HAVE BEEN ORDERED GRAVELED.

Michigan Avenue, between Lake St. and Park Place.
North Clark Street, between North av. and North Wells St. Comp'd.
Sixteenth " " State St. and Prairie Avenue.
Prairie Avenue " Sixteenth and Twenty-Second Sts.

THE FOLLOWING MISCELLANEOUS IMPROVEMENTS HAVE BEEN ORDERED.

Part of Haddock Place, block 8, Fort Dearborn Addition, to be paved with boulder stone.

Monroe Street, between Clark and Market Sts., to be curbed with curb wall.

La Salle Street, between Madison and Jackson Sts., curbed, filled and graded.

Erie St., between Clark and La Salle Sts., curbed and filled. Comp'd.

Pond near Grand Haven Slip, to be filled. Completed.

Archer Road, between Reuben St. and Western Avenue, to be cindered.

SIDEWALKS

ORDERED BY THE COUNCIL DURING THE YEAR.

The greater part of the labor on sidewalks is done in repairing and relaying, on the orders of the Board, and does not appear here.

The following lists show what was ordered by the Council during the year, and how far the orders have been executed:

SOUTH DIVISION.

B. sides	Monroe st. from Clark st. to Market st.	Partly laid.
B. sides	La Salle st. from Madison to Jackson sts.	Partly laid.
B. sides	Monroe st. from State st. to Michigan av.	Laid.
E. side	Blackwell st. bet. 19th and 20th sts.	Laid.
N. side	14th st. from State st. to Michigan av.	Not laid.
N. side	20th st. from Michigan av. to alley next west.	Not laid.
W. side	Wabash av. fronting lots 2 and 4, bl'k 5 S. W. ¼, secs. 22, 39, 14.	Not laid.
S. side	19th st. from La Salle st. (Wentworth av.) to Blackwell st.	Laid.
B. sides	12th st. from Clark st. to the Chicago river.	N. side laid.
S. side	17th st. from State to Clark st.	Laid.
S. side	16th st. from State st. to Wentworth av.	Not laid.
N. side	17th st. from Clark to State sts.	Laid.
S. side	Archer road from Deering st. to the river.	Partly laid.
E. side	Cottage Grove av. from 22d to 29th st.	Laid.
N. side	31st st. from Cottage Grove av. to I. C. R. R.	Laid.
E. side	State st. from 24th to 25th sts.	Laid.
W. side	Cottage Grove av. f'm Douglas place to Egan av.	Laid.
S. side	Archer road from Halsted to Main sts.	Not laid.
W. side	Chi. & Vincennes road f'm Doug. pl. to Egan av.	Not laid.
N. side	Gano st. from Kankakee to Calumet avs.	Laid.
E. side	Lake av. from Douglas pl. to city limits.	Partly laid.
S. side	25th st. from State st. to Indiana av.	Partly laid.
E. side	Church pl. from Archer road to C. A. & St. L. R.R.	Partly laid.
N. side	29th st. from Calumet to Cottage Grove avs.	
N. side	20th st. from Prairie av. to State st.	
E. side	Butler st. from Archer road to 25th st.	
S. side	25th st. from Butler to Hanover sts.	

SIDEWALKS.—CONTINUED.

WEST DIVISION.

E. side.	Noble st. from Cornell st. to Milwaukee av.	Laid.
B. sides.	Rumsey st. from Chicago av. to Clarinda st.	Laid.
E. side.	Rose st. from Chicago av. to Cornell st.	Laid.
N. side.	Hunt st. from Rucker to western terminus.	Laid.
W. side.	Noble st. from Chicago av. to Indiana st.	Laid.
W. side.	Noble st. from Milwaukee av. to Division st.	Laid.
N. side.	Division st. from Milwaukee av. to Noble st.	Laid.
S. side.	Chicago av. from Paulina to Reuben sts.	Laid.
S. side.	Indiana st. from Oakley to Wood st.	Partly Laid.
E. side.	Elizabeth st. from Indiana to Hunt st.	Laid.
N.E.s'd.	Milwaukee av. from Will to Noble st.	Laid.
W. side.	Elston road, from Milwaukee av. to N. W. R. R.	Laid.
N. side.	Fry st. from Reuben to Holt st.	Laid.
S. side.	Chicago av. from Noble st. to Reuben st.	Laid.
E. side.	Carpenter st. from Milwaukee to Chicago avs.	Laid.
N. side.	Jackson st. from Aberdeen to Rucker sts.	Laid.
S. side.	Walnut st. from Lincoln to Robey sts.	Laid except 2 lots.
S. side.	Park av. front'g lots 21 & 22 B. 53, Secs. 7, 39, 14.	Laid.
N. side.	Washington st. from Leavitt to Oakley st.	Laid except 3 lots.
E. side.	Lincoln st. from Madison to Warren sts.	Laid.
E. side.	Ann st. from Madison to Randolph sts.	Laid.
W. side.	Leavitt st. front'g lots 71, 76, 78, B. 39, Secs. 7,39,14.	Laid.
N. side.	Washington st. from Robey to Hoyne sts.	Laid.
S. side.	Fulton st. from Lincoln to Robey sts.	Laid.
W. side.	Aberdeen st. from Madison to Monroe sts.	Laid.
N. side.	Park av. from Hoyne to Leavitt sts.	Laid.
E. side.	Throop st. from Madison to Monroe sts.	Laid.
W. side.	Oakley st. from Lake st. to the S. line of lot 1, B. 56, Secs 7, 39, 14.	Laid.
E. side.	Robey st. from Madison st. to N. line of lot 13, N. W. ¼, B. 52, Secs. 7, 39, 14.	Laid.
E. side.	Carpenter st. from Lake to Madison sts.	Laid.
N. side.	Jackson st. from Rucker to Throop sts.	Laid.
E. side.	Throop st. from Adams to Jackson sts.	Laid.
E. side.	Western av. from Lake to Fulton sts.	Laid.
B. sides.	Morgan st. from Jackson to Van Buren sts.	Laid except 1 lot.
E. side.	Leavitt st. from Madison to Lake sts.	Laid.
N. side.	Lake st. from Ada to Sheldon sts.	Laid.
N. side.	Lake st., from Reuben to Robey sts.	Laid.
W. side.	Wood st. from Lake to Kinzie sts.	Laid.
W. side.	Ada st. front'g lots 1,2,3,4, Jane Rattray's sub-div.	Laid.
N. side.	Lake st. front'g lot 14, W. ½, 15, B. 21, Carp. add.	Laid.
E. side.	Lincoln st. from Madison to Jackson sts.	Laid except 3 lots.
S. side.	Monroe st. from Loomis to Laflin sts.	Laid ex. about 200ft
N. side.	Walnut st. from Wood to Lincoln sts.	Laid.
N. side.	Carroll st. from Elizabeth to Ann sts.	Partly laid.
N. side.	Lake st. fronting lot 10, B. 2, Sawyer's add.	Laid.
N. side.	Van Buren st. from Rucker to Throop sts.	Not laid.
N. side.	Washington st. from Hoyne to Leavitt sts.	Laid.
S. side.	Warren st. from Robey to Hoyne sts.	Partly Laid.
W. side.	Paulina st. from Walnut to Lake sts.	Laid.
S. side.	Walnut st. from Paulina to Wood sts.	Laid except 1 lot.
N. side.	Smith st. from Paulina to Wood sts.	Partly laid.

SIDEWALKS.—CONTINUED.

WEST DIVISION. Continued.

W. side.	Elizabeth st. from Washington to Randolph sts.	Laid.
S. side.	Taylor st. from Morgan to Johnston sts.	Laid.
N. side.	18th st. from Halsted to Seward sts.	Laid.
W. side.	Desplaines st. from 12th to DeKoven sts.	Laid.
N. side.	12th st. from Desplaines to Halsted sts.	Laid.
S. side.	Bunker st. from Jefferson to Desplaines sts.	Laid.
B. sides.	Tyler st. from Robey to Hoyne sts.	Partly laid.
B. sides.	Bunker st. from Desplaines to Halsted sts.	Not laid.
S. side.	Luke st. from Union to Halsted sts.	Laid.
E. side.	Peoria st. from Van Buren to Harrison sts.	Laid.
S. side.	Coolidge st. from Loomis to Reuben sts.	Laid.
E. side.	Newberry st. from 12th to Maxwell sts.	Laid.
W. side.	Halsted st. from Wright to 16th sts.	Partly laid.
E. side.	Ada st. from Lake to Fulton sts.	Laid.
E. side.	Blue Island av. from 12th to Catharine sts.	Laid except 1 lot.
S. side.	Mitchell st. from Jefferson to Canal sts.	Laid.
S. side.	Wright st. from Halsted to Newberry sts.	Laid.
W. side.	Newberry st. from Wright st. to R. R. Crossing.	Not laid.

NORTH DIVISION.

W. side.	Wolcott st. from Elm to Division sts.	Laid.
B. sides.	" " Kinzie to Indiana sts.	Laid.
S. side.	Division st. from Wolcott st. east to lot 2, N. ½ block 1, Sec. 3, 39, 14.	Laid.
E. side.	Sedgwick st. from White to Oak sts.	Laid.
E. side.	Clark st. from Chicago av. to Chestnut st.	Laid.
N. side.	Ontario st. from Market to Kingsbury sts.	Partly laid.
E. side.	Cass st. fronting lot 7, block 52, Kinzie's add.	Laid.
N. side.	Elm st. from Clark st. to alley next west.	Laid.
N. side.	Division st. from Clark to Wolcott sts.	Laid.
B. sides.	La Salle st. fronting lots 95 and 96, Bronson's ad.	Laid.
W. side.	Burling st. from Willow to Centre sts.	Laid.
S. side.	Clybourne av. from Sheffield av. to Asylum Place.	Laid.
E. side.	Clark st. from Franklin st. to Fullerton av.	Laid.
B. sides.	Menomenee st. from Wells to Clark sts.	Laid.
N. side.	Cane st. from Clark to Larrabee sts.	Partly Laid.
N. side.	Linden st. from Larrabee to Sedgwick sts.	Laid.
E. side.	Larrabee st. from Centre st. to Little Fort road.	Laid.
S. side.	Sophia st. from Franklin to Larrabee sts.	Partly laid.
S. side.	Centre st. from Clark to Sedgwick sts.	Partly laid.
S. side.	Centre st. from Hurlbut to Halsted sts.	Partly laid.
E. side.	Sedgwick st. between North and Belden avs.	Not laid.
S. side.	Asylum Place from Halsted to Franklin sts.	Partly laid.
S. side.	Willow st. from Halsted to Orchard sts.	Not laid.
B. sides.	Grove st. from Orchard to Larrabee sts.	Laid.
S. side.	Menomenee st. from Mohawk to Larrabee sts.	Partly laid.
S. side.	Clybourne Pl. from Clybourne av. to Clyb'e b'ge.	Laid.
S. side.	Fullerton av. from Clark to Halsted sts.	Partly laid.
W. side.	Little Fort road from Wells to Halsted sts.	Partly laid.
W. side.	Hurlbut st. from Centre st. to Fullerton av.	Partly laid.
N. side.	Asylum Place from Franklin st. to Lake Michigan.	Not laid.

SIDEWALKS

NOT LAID OR INCOMPLETE IN LAST YEAR'S REPORT.

SOUTH DIVISION.

E. side.	Indiana av. bet. 22d st. and Ridgely place.	Laid.
N. side.	Douglas pl. bet. Grove av. and Lake Michigan.	Partly laid.
W. side.	Prairie av. bet. Cottage Grove av. and 29th st.	Laid except 2 lots.
S. side.	Hickory st. bet. Mary and Lock sts.	Partly laid.
E. side.	Wentworth av. bet. 21st and 22d sts.	Laid.

WEST DIVISION.

B. sides.	Park av. bet. Robey and Hoyne sts.	Laid.
B. sides.	String st. from Canal Port av. south.	Laid.
W. side.	Ann st. bet. Lake and Kinzie sts.	Laid.
E. side.	Loomis st. bet. Van Buren and 12th sts.	Partly laid.
W. side.	Ridgeville road bet. Milwaukee and North avs.	Not laid.
E. side.	Jefferson st. bet. Mitchell and 22d sts.	Laid.
W. side.	Noble st. bet. Milwaukee av. and Division st.	Laid.
W. side.	Ada st. bet. Lake and Randolph sts.	Laid.
N. side.	North av. bet. Elston road and the Bridge.	Laid.
W. side.	Leavitt st. bet. Lake and Kinzie sts.	Laid.
N. side.	Washington st. bet. Oakley st. and Western av.	Laid.
B. sides.	Evans st bet. Union and Halsted sts.	Laid.
W. side.	Carpenter st. between Fulton and Kinzie sts.	Laid.
S. side.	Catharine st. bet. Blue Island av. and Morgan st.	Partly laid.
N. side.	Van Buren st. bet. Throop and Loomis sts.	Laid.
E. side.	Throop st. between Jackson and Monroe sts.	Laid.
B. sides.	Catharine st. bet. Canal and Jefferson sts.	Laid.
N.E. s'd	Milwaukee av. bet. Reuben and Wood sts.	Laid.
S. side.	Pratt st. bet. Milwaukee av. and Sangamon st.	Laid.
N. side.	Liberty st. bet. Canal and Jefferson sts.	Laid.
B. sides.	Barber st. bet. Jefferson and Union.	Laid.
B. sides.	Canal st. bet. Van Buren and 16th sts.	Laid.
E. side.	Hoyne st. bet. Walnut and Lake sts.	Laid.
B. sides.	Park av. bet. Lincoln and Robey sts.	Laid.
S. side.	Fulton st. bet. Green and Elizabeth sts.	Laid.
S. side.	16th st. bet. Halsted and Rucker sts.	Laid.
E. side.	Elston road bet. Mil. R. R. crossing and North av.	Laid.

NORTH DIVISION.

B. sides.	Whitney st. bet. Green Bay and Dearborn sts.	Laid.
S. side.	Oak st. bet. Clark and Wolcott sts.	Laid.
B. sides.	La Salle st. between Division st. and North av.	Laid.

LAMP POSTS.

ORDERED BY COMMON COUNCIL DURING PAST YEAR.

The following list shows the orders given by the Common Council during the past year, for the erection of lamp posts in the different divisions of the city; and, also, the progress that has been made in carrying out these orders:

SOUTH DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
Archer road bet. State st. and Stewart av.	21	Posts erected.
Indiana av. bet. 22d and 24th sts.	9	Assessment made.
16th st. bet. Indiana and Prairie avs.	2	" "
South Water st. bet. Clark and Franklin sts.	6	" "
South Water st. bet. Wabash and Michigan avs.	1	" "

WEST DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
West Indiana st. bet. Halsted and Morgan sts.	11	Posts erected.
Reuben st. bet. Madison and Lake sts.	12	" "
Wood st. bet. Lake and Hubbard sts.	19	" "
Robey st. between Walnut and Lake sts.	3	" "
Jackson st. bet. Aberdeen and Morgan sts.	8	" "
Corner Lake st. and St. John's pl.	1	" "
Fulton st. bet. Halsted and Green sts.	1	" "
Park av. between Wood and Hoyne sts.	11	" "
Washington st. bet. Elizabeth and Sheldon sts.	7	" "
Carroll st. bet. Reuben st. and St. John's pl.	2	" "
Clinton st. bet. Madison and Washington sts.	2	" "
12th st. bet. Morgan st. and Blue Island av.	5	" "
St. John's pl. bet. Fulton and Carroll sts.	3	" "
Bryan pl. bet. Randolph and Lake sts.	7	" "
Morgan st. from 12th st. 360 feet South.	3	" "
Halsted st. between Chicago av. and Indiana st.	17	" "
Morgan st. bet. Hubbard and Indiana sts.	4	" "
Fulton st. bet. Peoria and Sangamon sts.	4	3 Posts erected.
12th st. bet. Morgan and Brown sts.	4	Posts erected.
Hubbard st. from Wood to Lincoln sts.	6	" "
Brown st. corner of alley north of 12th st.	1	Post erected.

LAMP POSTS—CONTINUED.

NORTH DIVISION.

WHERE ERECTED.	No. Posts	REMARKS.
Oak st. bet. Wells and La Salle sts.	2	Posts erected.
Dearborn st. bet. Oak and Maple sts.	4	" "
La Salls st. bet. Elm and Division sts.	5	" "
Illinois st. bet. Wells and La Salle sts.	2	One Post erected.
Huron st. bet. Pine and St. Clair sts.	2	Assessment being made.

BRIDGES.

The only important work in the way of construction in this department during the year, has been the erection of a new bridge across the main river at Clark Street. The design of the bridge is by Mr. J. K. Thompson, the Superintendent for the Board in charge of Streets, Bridges, Public Buildings, &c., and it is believed to be an improvement on the other truss bridges. It differs from the truss bridges in use, principally in that the upper and lower chords are of iron instead of wood. The truss is like that of the other Howe truss bridges. The chords being of iron will last for a very long time, and the wooden braces can be renewed at any time, at but little cost, and with but comparatively little interruption to the travel by the bridge.

During the year attention has been directed, in an unusual degree, to the providing of some means of closing the bridge approaches while the bridge is open, in order to prevent accidents.

A great many models and plans for self-acting slides or gates have been brought before the Board, all having more or less merit, and all, as the Board believe, likely, if put in use, to be the cause of more accidents than now occur from the want of any barriers across the sidewalks and roadway of the bridge approaches.

The Board, however, being desirous of testing the utility of these machines by their practical operation, have offered to several of the inventors of what seemed to be the most promising machines, the opportunity of applying their invention to some important bridge, as at Clark Street, with the understanding that they should be paid only if the machines should be found to answer their purpose. None have yet seen fit to accept the proposition of the Board.

TUNNELS UNDER THE RIVER.

The Board have at various times reported to you so fully as to the expediency of constructing tunnels under the river to connect the three divisions, that it seems to us unnecessary to dwell further upon this subject now.

The Council having ordered the Board to proceed with the construction of a tunnel under the river at Washington Street, we have prepared plans, and are now about receiving bids for the work, and before the summer of 1868, it is hoped that the question as to the practicability and value of this method of passage of the river will be tested and decided from the experience of a tunnel constructed and in use.

PUBLIC BUILDINGS.

The Board have done nothing in this department, except what was necessary to maintain the various public buildings in repair, and to render such supervision and assistance as is required by the charter for the construction of the Engine Houses and Police Stations of the Board of Police, and the erection of School Houses for the Board of Education.

It is hardly necessary for the Board to say in this connection, that the rooms alloted for our use are altogether too limited for the convenient and economical accomplishment of the large amount of office work required of the Board, and it is hoped that we may be speedily provided with more spacious apartments.

PUBLIC PARKS AND CEMETERY.

A material advance as to the state of two of the parks of the city, Lincoln Park and Union Park, has been made by the adoption of plans to be carried forward year by year, according to which these parks shall be improved.

The work on both parks commenced late last fall and has been in progress through the winter.

At Lincoln Park the work contracted for included the excavating for, and formation of artificial lakes and artificial elevations of ground, the sodding around the borders of the lakes, and the trenching and grading of small portions of the park. As the only time afforded for doing the work was in winter, the progress made at the close of the fiscal year was not very great, but at the date of this report, the greater part of the work contracted for has been done, and the park already begins to disclose something of the beauty which it is believed it will wear when the plan begun shall be wholly carried out.

The work at Union Park was mainly that of the preparation of the soil. During last year some three thousand loads of manure were deposited on the grounds, and the drives and walks partly laid out. Since the commencement of the present year about one thousand loads of manure, in addition to that stated above, were placed on the grounds, the whole of the surface sub-soiled to the depth of eighteen inches and graded, and the drives and walks laid out and excavated to the depth of six inches. The main sewer from Randolph street has also been extended through the Park, and the Board are now preparing for the laying of the lateral drains to connect with it.

The appearance of Jefferson Park has also been greatly improved during the year. The paths and roadways have been laid out and excavated, and are now being graveled, the roadways having first been filled with cinders. The trees for the park will be planted during the coming fall.

The Board consented last year to the occupancy of Dearborn Park for the North-Western Sanitary Fair, on the condition that it should be

restored to the city in as good condition as it was before its use for the fair. It was not left in a proper condition, the fence and walks being very much injured, the trees and sodding destroyed, and the grounds defaced. The delay in doing the work of restoration agreed upon, caused considerable complaint during the winter and spring from the residents adjoining the Park. The Board are now taking measures for its improvement, which it is hoped will be satisfactory to them and the citizens generally.

At the Cemetery nothing has been done except to keep the fences, walks and grounds in repair. The abandonment of the "Milliman Tract," and the recent prohibition of further interments in the cemetery, suggest however the propriety of considering if it will not be well to provide for the exchange of all lots now owned there, and the removal of the bodies buried, and the conversion of the whole ground into a public park.

It seems unjust, when parties have made interments in their lots, to forbid their making any farther use of them for the purpose for which they were bought, and to compel them to bury their dead, part in one cemetery and part in another, without making provision for a suitable lot in exchange for the one which they are forbidden to use, or for some other fair compensation.

In conclusion, we invite your attention to the detailed Financial Statements appended hereto, and to the report of the City Engineer.

The following brief statement of the amounts of vouchers issued by the Board in their several departments, will give some idea of the extent, and labor pertaining to the accounts of the Board.

Water Fund, vouchers issued,	$ 733,617.58
Sewerage Fund, " "	306,224.12
Sewerage Sinking Fund, vouchers issued,	18,000.00
River Improvement Fund, " "	20,255.25
Appropriation Fund, " "	355,551.40
Special assessments, " "	287,962.86
Total,	$1,721,611.21

Respectfully submitted,

J. G. GINDELE,
FRED. LETZ,
O. J. ROSE,
} *Board of Public Works.*

REPORT OF THE CITY ENGINEER.

CHICAGO, AUG. 15, 1866.

To the Board of Public Works:

GENTLEMEN—The City Engineer herewith respectfully submits his fifth annual report, being for the year ending April 1st, 1866, but containing brief notices of the condition and progress of some operations since that time. Following the usual order, the first subject to be mentioned is the

WATER WORKS.

These have been tasked to a greater extent than ever before, in consequence of the rapid growth of the city, and the necessary increase in the consumption of water. Especially is this the case with the

PUMPING WORKS,

A full account of the condition and performances of which will be found in the following report of the engineer in charge of them.

REPORT OF ENGINEER OF PUMPING WORKS.

PUMPING DEPARTMENT WATER WORKS,
CHICAGO, April 1, 1866.

E. S. CHESBROUGH, Esq., City Engineer:

SIR:—A report of the operations of this Department for the year ending March 31st, is herewith respectfully submitted:

The total quantity of water pumped during the past year is 2,777,817,349 gallons, an increase of nearly 255,000,000 over that pumped last year.

Of the whole quantity the

Large engine pumped.....	1,692,038,880 gals.
Small " "	1,085,778,469 "
Being an average daily quantity of.....	6,610,459 "

The machinery has, of course, been in operation a large portion of every day throughout the year, and owing to the increased consumption of water, it has been found necessary at times to continue the pumping during the twenty-four hours.

The large engine has been in use 209 days, at an average of $17\frac{2}{6}\frac{0}{0}$ hours per day.

The small engine has been run 156 days, at an average of $19\frac{3}{6}\frac{4}{0}$ hours per day.

The total actual running time being $6680\frac{2}{6}\frac{0}{0}$ hours.

The whole amount of coal rec'd during the past year was		$4018\frac{6}{2}\frac{3}{0}\frac{0}{0}\frac{0}{0}$ tons
Amount on hand April 1st, 1865		$795\frac{5}{2}\frac{7}{0}\frac{0}{0}\frac{0}{0}$ "
Of this am't there has been used for pumping	$3350\frac{7}{2}\frac{5}{0}\frac{0}{0}\frac{0}{0}$	
For keeping steam when stopped	$100\frac{1}{2}\frac{0}{0}\frac{0}{0}\frac{0}{0}$	
For pipe laying, stoves, workshops, etc., etc.,	$192\frac{1}{2}\frac{1}{0}\frac{1}{0}\frac{0}{0}$	
On hand April 1st, 1866	$1169\frac{1}{2}\frac{7}{0}\frac{1}{0}\frac{9}{0}$	
	$4813\frac{1}{2}\frac{2}{0}\frac{0}{0}\frac{0}{0}$	$4813\frac{1}{2}\frac{2}{0}\frac{0}{0}\frac{0}{0}$

The following record will exhibit the aggregate operations of engines and boilers each month during the past year:

MONTHS.	Average Gallons Water pumped per day.	Total Gallons Water pumped per month.	Average lbs. of Coal consumed per day.	Total lbs. of Coal consumed per month.
1865.				
April,	6,304,382	189,131,463	15,730	471,910
May,	6,857,288	212,575,920	18,946	587,300
June,	8,331,168	249,935,040	21,210	636,300
July,	8,195,001	254,045,040	20,818	645,350
August,	8,246,485	255,641,034	19,355	600,010
September,	8,871,530	266,145,900	23,153	694,610
October,	7,948,601	246,406,639	20,339	630,510
November,	6,670,043	200,101,293	15,710	471,510
December,	6,213,442	192,616,708	15,520	481,120
1866.				
January,	7.640,144	236,844,455	18,480	572,900
February,	8,128,492	227,597,773	19,242	538,770
March,	7,960,519	246,776,084	18,454	572,090

TABLE SHOWING THE QUANTITY OF WATER PUMPED EACH MONTH,

From January 1st, 1858, to April 1st, 1866.

MONTHS.	1858.	1859.	1860.
January,	81,538,179	106,905,665	132,284,454
February,	69,426,515	106,401,412	130,800,720
March,	82,677,463	102,415,983	150,331,680
April,	82,600,782	89,994,235	132,930,516
May,	82,279,920	116,007,263	141,171,078
June,	90,211,505	113,098,416	148,197,024
July,	101,670,736	133,800,336	166,394,640
August,	107,176,652	123,266,556	152,427,690
September	108,534,540	131,735,847	132,272,202
October,	101,046,605	141,527,040	148,710,195
November,	86,385,840	127,342,018	150,493,248
December,	98,316,722	122,653,139	130,773,075
TOTAL,	1,091,865,457	1,415,147,910	1,716,786,552

MONTHS.	1861.	1862.	1863.
January,	137,651,918	151,971,047	169,900,255
February,	142,071,067	168,931,783	158,108,450
March,	135,576,447	192,937,942	159,930,404
April,	128,371,178	170,081,570	
May,	150,489,168	181,483,032	Hereafter the year commences on the first day of April.
June,	155,996,352	199,113,518	
July,	147,182,793	209,215,872	
August,	168,602,494	195,588,295	
September	152,710,186	186,902,888	
October,	149,362,166	199,045,045	
November,	153,879,648	187,002,720	
December,	145,261,272	175,006,027	
TOTAL,	1,767,154,689	2,217,279,739	487,939,109

MONTHS.	1863-4.	1864-5.	1865-6.
April,	173,519,952	178,013,170	189,131,463
May,	193,119,348	201,471,216	212,575,920
June,	194,255,701	230,814,576	249,935,040
July,	209,332,677	223,227,723	254,045,040
August,	217,561,920	257,109,360	255,641,034
September,	217,229,652	237,137,038	266,145,900
October,	185,678,001	191,542,516	246,406,639
November,	176,132,600	165,033,042	200,101,293
December,	199,592,696	208,044,966	192,616,708
January,	209,884,992	232,131,600	236,844,455
February,	176,088,647	189,244,751	227,597,773
March,	183,712,268	209,569,260	246,776,084
TOTAL,	2,336,108,454	2,523,339,218	2,777,817,349

TABLE SHOWING THE AVERAGE DAILY QUANTITY OF WATER PUMPED, TOGETHER WITH THE ANNUAL INCREASE FOR THE FOLLOWING YEARS:

Years.	Average daily quantity of water pumped.	Annual Increase.
1858	2,991,412	
1859	3,877,118	323,282,453
1860	4,703,525	301,638,642
1861	4,841,547	50,368,137
1862	6,074,739	450,125,050
1863	6,382,810	37,081,917
1864	6,913,258	207,715,858
1865	7,610,459	254,478,131

The following Tables exhibit in detail the operations of Engines, Pumps and Boilers during the year just closed:

LARGE ENGINE.

MONTHS.	No. of days run.	No. of Hours and Minutes run.	Av. No. of Hours run per day.	Av. galls. of water pumped per day.	Total galls. water pumped per month.	Pounds Coal consumed for pump'ng	Pounds Coal consum'd when at rest.	Total Coal used pr month.	Total Revolutions per month.
1865.		H. M.	H. M.						
April,	3	41 22	13 47	6,898,000	20,694,000	58,600	2,800	61,400	25,250
May,	31	478 11	15 25	6,857,288	212,575,920	563,300	2,400	587,300	259,370
June,	30	523 18	17 26	8,231,168	249,935,040	618,400	17,900	636,300	305,190
July,	31	539 06	17 23	8,195,001	254,045,040	624,650	20,700	645,350	310,190
August,	5	77 45	19 17	8,691,878	43,459,392	112,080	3,200	115,280	53,112
September,	29	564 59	19 29	8,880,561	251,536,272	666,030	11,900	677,930	314,542
October,	22	395 20	17 58	8,342,451	183,534,576	476,700	12,300	489,000	224,111
1866.									
January,	24	399 15	16 38	7,100,885	190,421,232	446,570	21,400	467,970	232,477
February,	22	394 05	17 54	8,105,136	178,312,992	417,050	16,400	433,450	217,712
March,	12	215 18	17 56	8,460,368	101,524,416	232,170	9,700	241,870	123,976
TOTAL,	209	3,628 39	17 20	7,986,226	1,692,038,880	4,215,550	140,300	4,355,850	2,065,930

SMALL ENGINE.

1865.									
April,	27	485 33	17 59	6,238,424	168,437,463	399,210	11,300	410,510	324,147
August,	26	614 38	22 45	8,122,371	212,181,642	481,730	3,000	484,730	408,165
September,	1	23 55	23 55	8,609,628	8,609,628	16,680		16,680	16,576
October,	9	182 45	20 18	6,985,785	62,872,063	137,910	3,600	141,510	121,014
November,	30	568 10	18 56	6,670,043	200,101,293	459,210	12,300	471,510	385,122
December,	31	551 34	17 47	6,213,442	192,616,708	466,220	14,900	481,120	370,676
1866.									
January,	7	124 27	17 47	6,631,889	46,423,223	98,730	6,200	104,930	89,347
February,	6	124 57	20 59	8,214,130	49,284,781	102,920	2,400	105,320	94,882
March,	19	376 12	19 48	7,644,825	145,251,668	322,620	7,600	330,220	279,610
TOTAL,	156	3,052 11	19 34	7,247,837	1,085,778,469	2,485,230	61,300	2,546,530	2,089,839

RECAPITULATION.

ENGINES.	No of days run.	No. of hours and minutes run.	Total gal. water pumped.	Pounds of coal consumed for pump'g.	Pounds of coal consumed when at rest	Total pounds coal used.	Total number revolutions.
		H. M.					
Large,	209	3,628 39	1,692,038,880	4,215,550	140,300	4,355,850	2,065,930
Small,	156	3,052 11	1,085,778,469	2,485,230	61,300	2,546,530	2,089,839
Total,	365	6,680 50	2,777,817,349	6,700,780	201,600	6,902,380	4,155,769

The expenses properly due to pumping during the year were as follows:

Salaries of engineers, firemen and others,	$8,097.67
3,451 $\frac{280}{2000}$ tons coal at an average of $9 $\frac{21}{100}$ per ton,	31,788.87
361¾ gallons of oil,	717.05
1120 pounds of tallow,	146.41
925 " waste,	259.87
Packing,	79.64
Gas for lighting works,	176.35
Small stores,	50.00
Repairs to machinery,	1,033.25
Total,	$42,349.11
Cost of delivering water, per million gallons,	$15.25

MACHINE SHOP.

During the past year 214 new hydrants have been manufactured besides a number of old ones repaired.

Seventy-four new stop valves have been made of various sizes, viz:

48 four inch,	7 eight inch.
17 six inch,	2 twelve inch.

In addition to the above work the usual amount of repairing has been done for bridges, and various other departments, under the control of the Commissioners.

The total expenditures for labor and material in the foregoing work, is - - - -	$18,592.59	
Add for interest, depreciation, &c., - - -	360.00	
Value of work turned out, based on current prices		24,053.88
Leaving as earnings for the year, - - -	5,101.29	
	$24,053.88	24,053.88

There are remaining on hand of

New hydrants, - - - - - -	40
Four inch valves, - - - - - -	21
Six " " - - - - - -	13
Eight " " - - - - - -	1
Twelve " " - - - - -	1

The value of these, together with the raw material on hand, amounts to	$3,986.89
Value of shop tools, patterns, etc.,	1,800.00
Total,	$5,786.89

PUMP WELL, INLET BASIN, ETC.

The trouble heretofore experienced from the accumulation of ice upon the shore of the Lake, near the inlet, and the quantity of small fish which infest the entrance to inlet, seems to increase annually.

During most of the past winter it required the exertions of a large gang of men, day and night, to keep a passage open to the pump well, in order to keep up a supply of water. During the cold weather this becomes a serious matter, but it is hoped when the "tunnel" is completed all annoyance from these sources will cease.

With these exceptions nothing has occurred during the year to interfere with the supply of water.

The machinery generally is in as good condition as circumstances will permit. No repairs of consequence have been done upon the engines. The boilers, however, have required considerable attention in this particular, and I would recommend that at a proper time the "front" of the large engine be so altered as to conform with the arrangement of the new building.

The new engine and boiler now in course of construction at the Morgan Iron Works, New York, is so far advanced as to be nearly ready for shipment.

The work is of the most satisfactory character. The aim both of the contractor and his assistants, has been to combine in it a degree of beauty and strength that will compare with any like work in the country. From a personal observation, and the opinions of others, it may be safe to say that they have been eminently successful.*

The plan alluded to in my last annual report, of building a "curb" of proper dimensions for a pump well for the new engine, having been adopted, work was commenced on the 19th of March, ult., of removing the walls of north wing of building to provide a location. The iron "shoe," for bottom of curb, is on the ground. The contract for the

* The delay in preparing this report (August 15th) affords an opportunity to state, before going to press, that the new engines have been transhipped at Buffalo, and are now on their way to Chicago.

sand is nearly completed, and the work will be commenced as soon as the surface is prepared for it. *

It is intended in the next annual report to give a more extended account of this part of the work, and it is hoped its success may then be recorded. Nothing is anticipated at present which may interfere with the prosecution of the work. Its proximity to the present works, however, will demand the utmost care.

Respectfully,

DEWITT C. CREGIER, ENGINEER.

CONNECTION BETWEEN LAKE TUNNEL AND NEW PUMPING WELLS.

In consequence of the progress made with the new pumping wells, as reported by Mr. Cregier, the connection between it and the Lake Tunnel can now be prosecuted to advantage. A commencement has already been made in the well for the gate chamber. This chamber is to be furnished with five gates, three to regulate the flow to pumping wells, one for the lake tunnel connections, and one for a new short inlet from the lake shore, to be used in case the lake tunnel should ever require repairs or cleansing. It is thought best to omit a more detailed description of this chamber until the next annual report, which it is hoped may be accompanied by a complete description of the lake tunnel, and the new pumping works.

INLET BASIN.

As already mentioned by Mr. Cregier, it was very difficult to keep the present inlet to the pumping works open during the past winter. This was a source of much anxiety at times, of suffering and danger to the men occasionally, and of unusual expense during the whole season.

The plan of extending the inlet basin 600 feet further into the lake, as recommended in the last annual report, was not carried out, because of the effect the proposed harbor improvements might have upon it, and because the proposed extension would, in a few years, probably be subject to the same inconveniences that attend the present basin. For these reasons it is thought best to construct, either this season or the next, a new inlet or short tunnel, about 800 feet long, to where the lake is about eight feet deep. For this inlet provision is to be made at the gate chamber, as above mentioned.

* The "well curb," 37 feet diameter by 24 feet high, has been sunk to within a short distance of the depth designed, without damage or accident, and is now at a point to insure complete success.

MAIN PIPES.

The attention of the board was called last year to the importance of more large mains, especially for the purposes of extinguishing fires more rapidly. Several complaints of the fire department, since then, show that this is becoming a very serious matter. Besides this, many persons in the heart of the city complain that they cannot get a supply in their upper stories during the day time, while formerly they had an abundance This evil can only be remedied by larger mains. These would cost very largely, but as a matter of insurance only they would be an excellent investment, to say nothing of the great value and comfort of restoring an abundant supply at all hours of the day to the upper stories of buildings.

DISTRIBUTING PIPES.

There were laid during the year ending March 31st, 1866, the following main and distributing pipes, viz:

SOUTH DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diamet'r in inches	Length in feet.
Prairie avenue	Twenty-first and Twenty-second	4	524
Liberty	East of Michigan avenue	4	325
Kankakee avenue	Twenty-sixth and Twenty-ninth	6	1,343
Twenty-fourth	East of Cottage Grove avenue	4	673
North	Clark and State	8	810
Wentworth avenue	Seventeenth and Eighteenth	4	410
Polk	Clark and Wells	8	850
Finnell	Wentworth avenue and Archer road	4	1,200
McGlashen	Twenty-second and Archer road	4	500
Arnold	Nineteenth and Archer road	4	690
Butterfield	Seventeenth and Eighteenth	4	438
Eighteenth	Butterfield and Burnside	4	310
Burnside	Sixteenth and Eighteenth	4	415
Seventeenth	Burnside and State	4	413
Madison	East of Wabash avenue	8	500
Wabash avenue	Madison and Randolph	8	890
Indiana avenue	Fourteenth and Sixteenth	6	1,233
Fourteenth	Indiana and Michigan avenue	4	100
Quarry	Archer road north	6	250
Michigan avenue	North of Twenty-second	6	220
Cottage Grove	South of Thirty-first	6	2,200
Indiana avenue	Twenty-second and Twenty-third	4	630
Division	South of Twenty-fourth	6	793
Bonfield	Archer road north	4	908
Main	Archer road north	6	1,300
	Hydrants	4	306
	Total		18,231

DISTRIBUTING PIPES.—CONTINUED.

WEST DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diamet'r in inches	Length in Feet.
Carroll	Reuben and Saint John	4	443
Aberdeen	Wilson and Harrison	4	379
Saint John Place	Fulton and Carroll	4	319
Washington	West of Elizabeth	4	182
Fulton	Robey and Lincoln	4	674
Robey	Fulton and Walnut	6	172
Leavitt	Washington and Park	6	182
Park avenue	Lincoln and Leavitt	4	1,757
Washington	East from Hoyne	4	476
Carroll	Wood and Lincoln	4	655
Rucker	Monroe and Adams	6	486
Reuben	Lake and Park avenue	6	408
Wood	Warren and Madison	6	300
Madison	Wood and Oakley	8	4,850
Leavitt	Park avenue and Lake	6	324
Leavitt	Warren and Madison	6	333
Mitchell	Canal and Jefferson	4	807
Maxwell	Canal and Jefferson	6	818
Wilson	Canal and Jefferson	4	818
Van Buren	East from Canal	6	408
Taylor	Canal and Clinton	6	456
DeKoven	Jefferson and Halsted	6	1,300
Ewing	Blue Island avenue and Halsted	4	500
Sholto	Polk and Eleventh	4	1,304
Hastings	Rucker and Laflin	4	2,086
Jefferson	North and Canal Port avenues	6	1,145
Canal Port avenue	Jefferson and Union	6	1,067
String	South of Canal Port avenue	4	562
Evans	Halsted and Union	4	523
Rucker	North from Polk	6	471
Tyler	Rucker and Aberdeen	6	722
Harrison	Beach and Ellsworth	4	419
Turley	Silver and Morgan	4	578
Fulton	Paulina and Wood	4	680
Wright	Jefferson and Canal	6	826
Front	East of Carpenter	4	500
Sebor	Halsted and Desplaines	4	900
Taylor	May and Throop	6	1,287
Ann	Madison and Washington		527
Augusta	Madison and Milwaukee avenue	6	1,225
Taylor	Blue Island avenue and Sholto	6	630
Canal	Eighteenth and Lumber	6	750
Rucker	Madison and Monroe	6	493
Jefferson	Fulton and Lake	4	300
Meagher	Jefferson and Union	4	800
Jefferson	North of Union	6	270
Bunker	Clinton and Jefferson	4	408
Peoria	Van Buren and Taylor	4	437
Van Buren	Halsted and Peoria	6	664
Halsted	Van Buren and Taylor	6	487
Halsted	South of Canal Port avenue	6	620
	Hydrants	4	869
	Total,		38,579

DISTRIBUTING PIPES—CONTINUED.

NORTH DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diamet'r in inches	Length in feet.
Huron	Pine and Saint. Clair	6	362
Lowe	Sedgwick and Wells	4	572
Black Hawk	Halsted and Clyborne avenue	6	625
Elm	State and Dearborn	4	250
Haines' Alley	Sedgwick and Clyborne avenue	4	838
Twomey	Haines Alley and Sedgwick	4	437
Sedgwick	Division and Elm	4	353
Whiting	Wells and Franklin	4	426
La Salle	North Avenue and Carl	4	754
Hurlbut	North of Sigel	6	367
Pearson	Cass and Public School	4	650
Clark	Chicago avenue and Pearson	6	504
Wells	Huron and Chicago avenue	8	673
La Salle	Division and Carl	4	1,911
Starr	East of Sedgwick	4	537
Scott	East of State	4	491
Oak	Franklin and Market	4	420
Kingsbury	Huron and Erie	4	369
Erie	Kingsbury and Roberts	4	390
Ontario	Market and Kingsbury (west of Glass W'ks)	4	465
Oak	East of Green Bay	4	255
Vine	North avenue, North	4	962
Hinsdale	Green Bay, East	4	540
Hurlbut	North avenue and Wisconsin	6	2,125
Wells	Menomonee and Southward	4	100
Menomonee	Wells and Sedgwick	4	1,105
Clark	Maple and Oak	6	505
Mohawk	West of Clark	4	1,020
Belden	North of North avenue	4	755
	Hydrants	4	368
	Total		19,130

The total length of pipe, laid in the whole city during the year, was 14 miles and 2020 feet.

During the same time and the year before, but not then reported, 910 feet of 6 inch, and 1640 feet of 4 inch pipes were taken up and replaced by larger ones.

The total length of pipes of different sizes in the city, April 1st, as near as can be ascertained, was as follows, viz:

24	inch	cast iron main pipe,	22,082 feet,
16	"	" "	10,610 "
12	"	" "	9,830 "
30	"	wrought iron river pipe, State street,	280 "
24	"	" " Chicago avenue	236 "
24	"	" " Rush street,	530 "
12	"	" " Adams street	176 "
12	"	cast iron distributing pipe,	454 "
10	"	"	7,862 "
8	"	wrought iron distributing and siphon pipe on Archer road,	90 "
8	"	cast iron distributing pipe,	66,126 "
6	"	"	253,585 "
4	"	"	366,316 "
3	"	"	30,388 "
		Total,	768,565 "

or 145 miles and 2,965 feet. The discrepancy between the above statements of lengths of pipe laid, and the one made in the report of the board, is owing to clerical errors discovered since that went to press.

HYDRANTS.

During the year ending April 1st, the following new hydrants were put in, viz:

SOUTH DIVISION.

1 Engine house, corner Dearborn and Washington.
1 South end State street bridge.
1 N. W. corner 12th street and Wabash avenue.
1 N. W. " Prairie avenue and 21st street.
1 S. W. " Michigan avenue and Randolph street.
1 N. side 12th street, between 3d and 4th avenues.
1 N. W. corner Wells and Adams.
1 S. W. " Wentworth avenue and 17th street.
1 N. E. " 16th and 3d avenue.
1 N. side Polk, bet. Griswold and Sherman.
2 W. side Kankakee av., between 26th and 29th.
1 N. W. corner Finnell and Bradley.
1 W. side State st., Enterprise Engine House, bet. Harrison and Congress.
1 N. E. corner 18th and Burnside.
1 N. W. " 20th and Arnold.
1 W. side McGlashen, bet. 22d and Archer road.

1 N. W. corner State and 17th.
1 N. W. " Madison and Michigan avenue.
1 N. E. " Washington and Wabash avenue.
1 N. W. " Indiana avenue and 23d.
1 S. W. " " " 14th.
1 W. side Indiana av. bet. 14th and 16th.
1 N. W. cor. Main and Cologne.
1 End of pipe on Main street, north of Archer road.
1 W. side Cottage Grove avenue, bet. 31st and Lyon avenue.
1 N. W. cor. " " and Lyon avenue.
1 W. side " " opposite S. end of University.
28 Total in South Division.

WEST DIVISION.

1 W. side Reuben, opposite Carroll.
1 N. W. corner St. John place and Fulton.
1 S. W. " Aberdeen and Taylor.
1 S. W. " Fulton and Robey.
1 N. W. " " Lincoln.
1 N. W. " Hoyne and Park avenue.
1 N. E. " Wood and Carroll.
1 N. W. " Madison and Paulina.
1 N. W. " " Wood.
1 N. E. " Robey and Park avenue.
1 N. W. " Madison and Lincoln.
1 E. side Reuben, opposite Park avenue.
1 N. E. corner Madison and Robey.
1 N. W. " " " Hoyne.
1 N. W. " " " Leavitt.
1 N. W. " " " Oakley.
1 Engine House, Maxwell, bet. Canal and Clinton.
1 N. E. corner Van Buren and Canal.
1 N. E. " Clinton and Taylor.
1 N. W. " " Maxwell.
1 N. W. " Union and DeKoven.
1 N. side Hastings, centre of block, bet. Rucker and Throop.
1 N. side " " Throop and Loomis.
1 N. side " " Loomis and Laflin.

1 S. W. corner Jefferson and 16th.
1 W. side Jefferson, bet. 16th and Canal Port avenue.
1 N. E. corner Canal Port avenue and Union.
1 W. side of String, end of pipe.
1 N. side of Harrison near Ellsworth.
1 N. W. corner Mitchell and Clinton.
1 N. E. " Gurley and Morgan.
1 N. side Tyler, centre of block, bet. Rucker and Aberdeen.
1 N. W. corner Fulton and Paulina.
1 E. side Clinton, bet. Washington and Madison, (Gates' Factory.)
1 N. W. corner Canal and Lumber.
1 E. side Union, opposite Evans.
1 N. side Front, east of Fifth.
1 N. E. corner Jefferson and Wright.
1 N. W. " Sebor and Desplaines.
1 N. side Sebor, in centre of block, bet. Halsted and Desplaines.
1 N. W. corner Augusta and Noble.
1 Augusta, west end of pipe.
1 N. W. corner Taylor and Rucker.
1 N. W. corner Madison and Ann.
1 N. W. " Taylor and May.
1 N. W. " " Throop.
1 N. W. " Halsted and Tyler.
1 N. W. " Van Buren and Green.
1 N. W. " " Peoria.
1 N. W. " Tyler "
1 N. E. " Jefferson and Fulton.
1 N. W. " " Meagher.
52 Total in West Division.

NORTH DIVISION.

1 N. W. corner Sedgwick and Twomey.
1 W. side Clybourn avenue and Haines' alley.
1 S. W. corner North avenue and La Salle.
1 S. W. " Clark and Pearson.
1 N. E. " Wells and Huron.
1 N. E. " " Superior.
1 W. side Larrabee, North Star Engine House, bet. Linden and North av.

1 N. W. corner La Salle and Goethe.
1 N. W. " " Schiller.
1 N. W. " " Division.
1 N. W. " Erie and Roberts.
2 N. side Michigan, engine house, bet. Cass and State.
1 N. W. corner Scott and State.
1 N. W. " " Astor.
1 N. side Hinsdale, end of pipe, east of Geary.
1 W. side Vine, bet. North avenue and Willow.
1 N. E. corner Belden av. and Hurlbut.
1 N. E. " Division and Halsted.
1 N. W. " Chicago avenue and Franklin.
1 N. side Star, east of Sedgwick, (end of pipe.)
20 Total in North Division.

In all 100, making the total number in and belonging to the city April 1st, 706.

Eighty-six hydrants were taken out and renewed; 10 received more or less repairs. All of the new hydrants are of the Cregier patent, which continue to give as much satisfaction as ever.

The unusual severity of the last winter caused a great many hydrants to freeze, but of the total number of instances, 685, of hydrants being frozen, only a few occurred with those that were connected with the sewers, and those were owing to causes that may be removed whenever the streets are raised to grade. About 340 are now connected, but it is impossible, however, to connect all the hydrants with the sewers, as there are seventy miles more of water-pipes than there are of sewers.

STOP-COCKS.

The following stop-cocks have been put in during the year ending April 1st, 1866, viz:

SOUTH DIVISION.

1 4 inch Clark and Harrison. (Blow off.)
1 8 " Sixteenth and Clark.
1 4 " Sixteenth and Third Avenue.
1 4 " " and Fourth Avenue.
1 6 " Cottage Grove Avenue and Thirty-first.
1 4 " Indiana Avenue and Twenty-second.

1 12 inch. Wabash Avenue and Twelfth.
1 6 " Twelfth and Third Avenue.
1 6 " Madison and Clark. (Blow off.)
1 8 " State, south end bridge. (Blow off.)
10 Total number in South Division.

WEST DIVISION.

1 4 inch. Fulton and Lincoln.
1 4 " Park Avenue and Reuben.
1 6 " Reuben and Park avenue.
1 8 " Madison and Lincoln.
1 4 " Reuben and Warren.
1 4 " Reuben and Lake.
1 6 " Reuben and Hubbard.
1 8 " Reuben and Madison.
1 6 " Reuben and Chicago Avenue.
1 4 " Sholto and Polk.
1 4 " Hastings and Rucker.
1 6 " Rucker and Tyler.
1 4 " (Blow off.) Ellsworth and Harrison.
1 6 " Taylor, and May.
1 6 " Van Buren and Halsted
1 4 " (Blow off.) Van Buren bet. Canal and Beech.
1 4 " Fulton and Halsted. (Blow off.)
17 Total unmber in West Division.

NORTH DIVISION.

1 4 inch, Wells and Whiting.
1 4 " State and Pearson.
1 6 " Clark and Chicago avenue.
1 4 " Wells and Huron. (Blow off.)
1 4 " State and Illinois. "
1 4 " Franklin and Oak.
1 8 " Wells " "
1 4 " La Salle " "
1 4 " Market " "
1 6 " State " "
1 4 " Dearborn " "

1	4 inch	Oak and Green Bay.
1	4 "	Chicago avenue and Pine.
1	4 "	La Salle and Division.
1	4 "	Vine and North avenue.
1	6 "	Hurlbut and North avenue.
1	4 "	Wells and Menomonee.
1	6 "	Clark and Oak.
1	4 "	Mohawk, and North avenue.
	20	Total number in North Division.

In all 47, making, together with those previously put in, 369 in the City. Besides the stop-cocks newly established, 18 old ones were renewed by others made at our own work shop.

RESERVOIRS.

No important change has taken place in any of these since the date of the last annual report. The improvements then mentioned as having been made around the West Reservoir, make the North and South Reservoirs, particularly the latter, look more neglected than ever.

QUALITY OF THE WATER.

Complaints on this account have been less numerous than usual, but have occasionally been made. It is hoped, however, that entire relief from this annoyance will be obtained soon after next New Years, by the completion of

THE LAKE TUNNEL.

The work has reached from the land shaft a distance of 7,160 feet, showing a progress since April 1st, 1865, of 5,135 feet, which for a period of 427 working days, gives an average rate of 12 feet a day, including all stoppages and delays of whatever nature. Frequently the rate has been 15 feet a day for a week at a time. The character of the ground continues to be the same as before reported.

The crib, as mentioned in a foot note on page 55 of the last annual report, was launched on the 25th of July, 1865, and immediately towed out to its position. It was then filled with about 9,000 tons of stone, after which the sides were raised about 2½ feet on an average, and a house built over it for the protection and accommodation of the men, machinery and materials. The work of sinking the cylinder or cast iron

shaft was then commenced. This was forced down into the clay about 25 feet. The shaft was continued by means of brick masonry about 20 feet lower to the bottom of the sump. It was felt from the commencement of the work, that the placing and securing of the crib in its position would be the most difficult and doubtful operation of the whole enterprise, and it was feared that at least one crib might be lost in the attempt. A severe storm occurred at a most critical time, just after the crib had been settled into position, but before it had ballast enough to hold it. Had this storm been somewhat more severe and protracted, there is reason to believe the crib would have been ruined; but as it was, we were greatly favored in having some of the seams part just enough to show what danger there was, without going sufficiently far to unfit the crib for its intended use. Since the filling of the crib with stones, no storms or movements of ice have moved it from its position to the slightest appreciable extent. The ice has rubbed and ground the sides at different levels of the surface of the lake, and two of the angles will have to be protected more thoroughly by iron plates. Various interesting particulars with regard to this portion of the work, it is hoped, will be given in a complete description of the Lake Tunnel, in the next annual report, if not earlier.

The regular work of tunnelling from the bottom of the lake shaft, was not commenced till the beginning of this year. A short piece of about 60 feet was made eastward, to be used in the alignment of the tunnel. The distance reached westward is 1,725 feet, leaving 1,675 feet still to be done.* The ground at this end has been very similar to that at the other, rather more troublesome on account of the tendency to cave, and consequently more expensive with regard to extra work.

Judging from past progress, there is good reason to believe that the parties working at the two ends will meet early in November. It will probably take another month to complete the work, and soon after New Years it is hoped that pure lake water may be introduced through it into the city.

SEWERAGE.

The report of the Principal Assistant will be found immediately below, and gives all the details of the operations of this department.

* At the date of this form going to press, (Sept. 20,) the distance has been reduced to a little less than 1,000 feet.

CHICAGO, MARCH 31, 1866.

To E. S. CHESBROUGH, ESQ., *City Engineer:*

SIR—I submit herewith a report of the sewers built during the past year in the three divisions of the City, and of the repairs and cleansing of the sewers heretofore built, and of the private connections with the same.

The total length of sewers built during the year was 29,948 lineal feet, or about 5¾ miles, making with those previously built an aggregate of $75\frac{662}{5280}$ miles.

The following table gives their distribution in the three districts:

LENGTH OF FEET OF SEWERS BUILT TO APRIL 1ST, 1866.

Diameter in feet.	SOUTH DIVISION.		WEST DIVISION.		NORTH DIVISION.		TOTAL FEET.
	Previous to April, 1865.	From Apl 1, 1865, to Ap'l 1, 1866.	Previous to April 1, 1865.	From Apl 1, 1865, to Ap'l 1, 1866.	Previous to April 1, 1865	From Apl 1, 1865 to April 1, 1866	
6	1,419		1,292		3,895		6,606
5	1,647	1,372	26,255		8,507	1,875	39,656
4½			13,557	6,601	2,721	1,870	24,749
4	1,952		6,541	660	5,498		14,651
3	16,201	426	1,613		5,579		23,819
2½	27,056	1,363			2,284	1,260	31,963
2¼	6,359						6,359
2	24,916	3,828	41,468	5,636	42,279	2,765	120,892
1	69,815		27,136	1,286	28,724	1,006	127,967
	149,365	6,989	117,862	14,183	99,487	8,776	396,662
Totals,	156,354		132,045		108,263		$75\frac{662}{5280}$ ms.

CATCH BASINS AND MAN HOLES.

	Built from April 1, 1865, to April 1, 1866.			Previously Built.	Total.	Average Cost.
	South Div.	West Div.	North Div.			
Catch Basins,.	59	107	57	1,684	1,907	$72.60
Man Holes,...	52	69	47	2,588	2,756	

Unexecuted contracts, which were delayed for the want of Bricks, and on account of the wet weather during the past season, remain as follows, viz:

South Division, 7,368 Lin. feet of 5, 4, 3, 2½ and 2 ft. sewers.
West Division, 9,260 " of 4½ and 4 ft. sewers.
North Division, 1,500 " of 5 and 2 ft. sewers.
Total, 18,128 feet.

RETURN OF LINEAR FEET OF SEWERS BUILT FOR THE YEAR ENDING APRIL 1, 1866.

LOCALITY.			5 feet.	4½ feet.	4 feet.	3 feet.	2½ feet.	2 feet.	1 Pipe.	C'tch B'sin	Man Holes
SOUTH DIVISION.											
On what Street	From	To									
State	Twenty-second	Twenty-fourth.	1,372								
Twenty-second	Stuart Ave.	Westward				426					
"	"	Clark						1,800			
Prairie Ave.	Twenty-second	Nineteenth					1,363				
"	Nineteenth	Sixteenth						1,292			
Michigan Ave.	Twenty-third	Twenty-fourth,						736			
Total South Division			1,372			426	1,363	3,828		59	52
WEST DIVISION.											
Harrison	Halsted.	Green		281							
Milwaukee Av.	Fourth.	Chicago Ave.		2,230							
Randolph	Morgan	Reuben		4,090							
Washington	Reuben	Westward			300						
W. Indiana	Milwauk. Ave.	Green			360						
Sheldon	Fulton	Carroll						331			
Throop	Adams	Jackson						492			
Sangamon	Fulton	Lake						455			
"	Adams	Jackson						501			
"	Randolph	Lake						323			
Morgan	Fulton	"						454			
Ann	Madison	Washington						496			
Aberdeen	Adams	Monroe						487			
"	"	Jackson						489			
Curtis	Washington	Lake						900			
Wing Sewers	Rand. st. sew	North & south.						400			
"	Milwauk. Ave.	East & west						308			
Monroe	Peoria	Morgan.							609		
Peoria	Madison	Washington							495		
Curtis	Washington	Southward							122		
Total West Division				6,601	660			5,636	1,286	107	69
NORTH DIVISION.											
Clark	Chicago Ave.	Maple	1,875								
North Ave.	River	Clybor'ne Ave.		1,870							
Clybourne Ave	North Ave.	Black Hawk					1,260				
"	Black Hawk	Division						2,565			
Wing Sewers	Clark	East & west						200			
Cedar	Green Bay	Eastward							235		
Huron	Market	Westward							270		
Pearson	Wolcott	"							69		
Franklin	Superior	Southward							432		
Total North Division			1,875	1,870			1,260	2,765	1,006	57	47
Total three Divisions			3,247	8,471	660	426	2,623	12,229	2,292	223	168
Average cost per foot			$6.67	$5.72	5.22	3.88	2.67	2.44	1.69	72.60 each.	

Grand Total, ... 29,948 linear feet—5 $\frac{3}{5}\frac{5}{2}\frac{4}{8}\frac{8}{0}$ miles.

REPAIRS.

The total cost of repairs made during the year, in the three districts, amounts to $7,393.74, distributed as shown by the following tabular statement:

	South Division.		West Division.		North Division.		Totals.	
	FT.		FT.		FT.		FT.	
Repairs of Sewers	113	285.63	98	$106.40	65	$154.00	376	$546.03
" Catch Basin (No. of,)	106	972.75	108	947.00	104	965.00	318	2,884.75
Altering Man-holes and Catch Basins to grade (No. of,)	51	601.75	13	36.78	15	36.75	79	675.28
Covers renewed and repaired	332	1,778.50	97	877.00	136	732.00	565	3,387.50
Totals of Cost		3,638.63		1,967.18		1,887.75		7,493.56

CLEANSING OF SEWERS.

	South Division.		West Division.		North Division.		Totals.		
	Lin. ft clea'd.	Cost.	Feet clea'd.	Cost.	Feet clea'd.	Cost.	Feet clea'd.	Cost.	per 100 ft.
Cleansing with Chain Machine	9,150	1,064.59	15,350	1,992.65	300	179.85	24,800	3,237.09	12.65
Cleansing by Flushing	73,720	1,270.09	49,600	1,230.91	26,450	904.86	149,770	3,439.86	2.29
Cleansing by Scrapers and barrows			41,200	1,028.41	22,200	944.86	63,400	1,973.27	2.13
Total Sewers cleansed, and cost	82,870	2,334.68	106,150	4,251.97	48,950	2,119.57	237,970	8,706.22	3.65
No. of Catch Basins clea'd	1,697	2,149.35	949	1,480.90	723	1,481.60	2,767	5,111.85	Each. 1.85
Total cost of cleansing		4,484.03		5,732.87		3,601.17		13,818.07	

The total length of sewers laid is above 75 miles. This gives the cost of cleansing to be about $116 per mile, which is mainly due to the unpaved state of most of the streets. Where the streets are paved the sewers are kept in good order by occasional flushing, which it will be observed is much the cheapest method of cleansing them.

The case is similar with regard to the repairs of the sewers. Wherever the streets are raised to grade and paved, the necessity for any repairs of the sewers or catch basins ceases at once. In several streets, chiefly in the North Division, the grade should be brought up as soon as possible, for the protection of the sewers from the effects of frost and of the traffic.

PERMITS FOR PRIVATE DRAINS ISSUED FROM APRIL 1, 1865, TO APRIL 1, 1866.

PART OF THE CITY.	6 inch Drains.	9 inch Drains.	12 inch Drains.	Total in 1865-66.	Total previously laid.	Total to April 1, 1866
South Division,	550	24	4	578		
West Division,	404	19	1	424		
North Division,	269	15	2	286		
Totals,	1,223	58	7	1,288	3,850	5,138

Yours respectfully,

W. H. CLARKE,

Prin'l Ass't Engineer.

Mr. Clarke's observations relative to the effect of unimproved streets, in causing so much additional expenditure for cleansing and repairing the sewers and catch-basins, show the importance to the drainage of the city of raising the streets to grade and paving them.

In the original plan of the sewerage of the city, it was proposed to provide for the flow of a constant stream of water into the head of the principal sewers for the purpose of keeping them free from offensive smells, this being thought desirable on account of the slight inclination they have. Nothing of this kind has been carried out yet, and experience shows it is not needed in those parts of the city where buildings are close together and connected with the sewers; but the want of such a provision is felt in some other portions of the city. In this connection, it is an interesting fact that the water from the artesian wells on the western limit of the city, and which is now complained of as a nuisance by some of the neighbors whose lands are flooded by it, might be advantageously turned into the sewers, whenever the system is extended that far.

CONDITION OF THE RIVER.

This has been about as usual, at times very offensive, and again free from disagreeable odors. One fact well known before to those who have given much attention to this subject, has been made more apparent than ever, and that is that if the drainage from the distilleries on the North Branch could be stopped, there would be but little difficulty in keeping the river in a bearable condition until the deepening of the Illinois & Michigan canal is completed. While the North Branch, high up, was exceedingly offensive the early part of the warm season of this year, the South Branch was not so, unless for a short distance from its mouth, except when the pumps at Bridgeport were put in operation after rains had driven a portion of the contents of the North Branch into the main river. If the ordinances of the city relative to this matter could be enforced, the North Branch would be freer from offensiveness than the south, as was the case during the time the distilleries stopped running in consequence of the action of the national government.

HARBOR.

The extension of the north pier, as described in the last annual report, was raised before the end of the season to the uniform height of about six feet above average water in the Lake. In consequence of doubts

with regard to the action the national government might take in regard to the further extension of this pier, it was thought best not to plank over the top of the present portion, for if the further extension should be raised higher than six feet above water, then this should be raised to correspond. This spring the pier was found to be in good preservation, not having perceptibly settled or moved, or lost any stone on account of having no planking on most of its top. Since the spring, the only injury the pier has received, has been the breakage of two or three timbers by the blow of a vessel.

Soundings have been made this season at the entrance of the harbor, for a short distance north, and for a considerable distance south. The following facts have been obtained: On the north side of the north pier, to the very end of the extension, the water has shoaled from three to six feet in a year, thus showing a large and rapid accumulation of material at a point from which a bar may soon be formed across the entrance to the harbor. Already there are decided indications that the formation of such a bar has commenced, and it is impossible to tell how much a single, protracted, northeasterly storm may add to it.

For this reason it was recommended sometime since that an appropriation be made for dredging the present season, in case it should be necessary. It is very gratifying in this connection that the national government has taken steps to extend the north pier about 600 feet further out, for it will probably be done not one day too soon.

The soundings south of the harbor entrance, show that the movement of the bar westward, as described and accounted for by Col. Cram—see last annual report, p. 66—still continues. During the past year it has moved on the line of Madison street 300 feet westward. It has already rendered the south channel impracticable for vessels of heavy draught, and bids fair soon to close up what was for many years the only entrance to the harbor.

RIVER TUNNELS.

Various plans and estimates for tunnels under the river, at different points, have been presented during the past year. As that on Washington street is the only one likely to be carried out soon, it is hoped that the revised plans of it will soon be completed, at least, whenever the question now agitated relative to the entrances for foot passengers can be decided.

DOCK LINE SURVEY.

This survey, which includes both sides of the river, and branches from the harbor entrance to the city limits, both north and west, has been very nearly completed from the mouth of the river to Bridgeport, and to Halsted street on the North Branch. It was hoped that this survey would have been finished months ago, but the many difficulties met with from the enormous amount of business along the river docks, and the manner in which that business is done have rendered it impossible, with the force it was deemed proper to employ, to get the work done. The lot lines, and the original meander lines of the river, both of which are so necessary in making assessments relative to the proposed widening of the river, present peculiar difficulties, and require a local knowledge of records and landmarks possessed by a very small number of surveyors. The almost utter valuelessness of former surveys of the river, made with reference to widening it, on account of their inaccuracies or defficiencies, show how useless it is to run the risk of errors in this by undue haste.

One important result of the survey, thus far, is that the South Branch could be made 175 feet wide throughout. It was hoped that it might be made 200 feet wide, but owing to existing improvements this would be impracticable without enormous expense; besides it may be doubted if it would be practicable to preserve a sufficient depth of water for navigation, if the width should be made much greater than 175 feet, which seems to be the outside limit of what nature designed for the South Branch.

Respectfully submitted,

E. S. CHESBROUGH,

City Engineer.



APPENDIX.

FINANCIAL STATEMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1866.

WATER DEPARTMENT.

	Dr.	Cr.
Water Works	$1,528,067.50	
Water Works, New Well Chamber	3,959.95	
Water Works Income		$1,603,802.44
Water Works, New Engine House (1866)	167.18	
Water Works, New Engine	32,242.03	
Water Loan Bonds, 6 per cent		1,030,000.00
Water Loan Bonds, 7 per cent		629,000.00
Water Loan Interest	684,552.41	
Water Works Expenses and Repairs	586,133.24	
Discount on 6 per cent. Water Loan Bonds	53,868.32	
Water Fund in hands of City Treasurer—due him		72,194.87
Water Works Stock	16,359.10	
Water Works Coal	10,915.88	
Duncan, Sherman & Co.—Coupon Account	54,485.00	
Water Works Service Cocks	927.98	
Lake Tunnel, Expenditure to date	339,528.94	
Water Pipes	29,214.53	
Pumping Works—Stock on hand	4,575.25	
	$3,334,997.31	$3,334,997.31

WATER FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1, 1865, to March 31, 1866, inclusive; and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Water Tax Collected	$252,500.12	
Proceeds of 377 Bonds, 7 per ct., including interest,	358,090.92	
Proceeds of temporary Loan	91,540.00	
Received for tapping pipes	7,371.95	
" for shutting off and letting on water	223.65	
" for sale of hydrants, material, coal, old iron and labor	3,195.22	
Expenses on account of Lake Tunnel refunded	166.70	
Freight Charges refunded	100.00	
Inspector's Services	112.00	$713,300.56
ADD—		
Amount due City Treasurer April 1, 1866	$72,194.87	
Less amount due him April 1, 1865	51,877.85	20,317.02
		$733,617.58

EXPENDITURES.

ADDITION TO WATER WORKS.

DISTRIBUTING PIPES LAID.

	Cash Payment.	True Cost.
Cast Iron pipe, 4, 6, 8, and 12 inch	$75,543.91	
Testing and laying pipe and building catch basins	15,351.66	
Trenching and back filling	8,858.53	
Lead	8,269.80	
Tapers, caps, sleeves, bends, and branches	4,439.78	
Gasket	134.00	
Coal	132.30	
Hay, oats, and feed	185.55	
Repairing wagon	38.75	
Horse shoeing	39.31	
New harness and repairing harness	60.00	
Advertising for proposals for trenching	57.38	
Amount carried forward	$113,110.97	

		Cash Payment.	True Cost.
Amount brought forward.....	$113,110.97		
Brick for catch basins.....	1,420.67		
Covers and bottoms for catch basins...	225.00		
Drain pipe for catch basins.....	388.50		
Plugs	22.15		
Cement.....	988.45		
Lumber.....	242.98		
Wood.....	5.50		
Iron for tools.....	43.48		
Nails.....	34.00		
Paint and oil.....	27.90		
Pattern for branches and way pipe.....	25.00		
Miscellaneous.....	46.50	$116,581.10	
Add—			
Pipes used previously paid for.....	$19,429.44		
New hydrants put in.....	3,375.12		
New stop cocks put in.....	1,175.39		
Tools made at shop	305.82		
Discount on 7 per cent. bonds.	7,421.70		
	$31,707.47		
Deduct—			
Labor for private parties...$ 85.00			
Pipe sold..... 1,871.34	1,956.34		
	$29,751.13		$146,332.23
Total addition to cost of Water Works, not including Lake Tunnel and new Engine and Buildings,		$116,581.10	$146,332.23

LAKE TUNNEL.

		Cash Payment.	True Cost.
Dull & Gowen, on account Lake Tunnel, outer crib, and extras,.....	$188,551.49		
Services of Engineer,.....	1,075.00		
Services of draughtsmen.....	72.00		
Services of inspectors	7,031.00		
Lumber.....	54.27		
Lumber for crib.....	338.51		
Piles, including freight.....	338.00		
Bedding and furniture for inspectors at crib.....	93 18		
Castings for shaft at crib.....	11,923.09		
Freight and hauling castings for shaft..	706.77		
Castings.....	265.39		
Amount carried forward.....	$210,448.70		

		Cash Payment.	True Cost.
Amount brought forward	$210,448.70		
Dredging for crib	1,500.00		
Use of Tugs	2,533.00		
Removing piles	209.38		
Use of steam pump at crib	299.60		
Expenses to Cairo	300.00		
Artesian Well	341.54		
Placing buoy for crib	141.95		
Tug watching ways	810.93		
Oil and candles	44.83		
Sounding for crib	16.00		
Use of boats	60.59		
Locating crib	38.27		
Nails and hardware	43.65		
Repairing instruments	65.00		
Carpenter work	74.00		
Coal, lamps, and oil for crib	49.66		
Labor	37.00		
Field Glass	23.00		
Horse keeping	110.27		
Lead	150.95		
Use of Capstan at crib	25.00		
Chain	63.58		
Surveyor's chain and tape measure	16.30		
Advertising	28.88		
Interest on payment to Dull & Gowen	97.77		
Rope	49.12		
Iron and labor at crib	130.89		
Taking gauge at crib	22.50		
Coal at inspector's office	13.50		
Miscellaneous	104.30	$217,850.16	
Add—			
Labor at pumping works shop	$ 316.51		
Discount on 7 per cent bonds	12,332.11		
	$12,648.62		
Deduct—			
Expenses and labor refunded	278.70		$230,220.08
	$12,369.92	$217,850.16	$230,220.08

NEW WELL CHAMBER (1866).

		Cash Payment.	True Cost.
Foundation castings	$3,500.00		
Carpenter work	109.00		
Lumber and nails	93.73		
Advertising	28.86	$3,731.59	
Add—			
Discount on 7 per cent bonds	$228.36		$3,959.95

NEW ENGINE.

G. W. Quintard, on account of engine	$29,785.75		
Engineer's expenses to New York	648.00		
Plans and specifications	56.00		
Advertising	28.88		
Telegrams	2.50	30,521.13	
Add—			
Discount on 7 per cent bonds	$1,712.70		
Labor at pumping works shop	8.20		
	$1,720.90		32,242.03

NEW ENGINE HOUSE (1866).

Labor at pumping works shop for tearing down old building			167.18
		$34,252.72	$36,369.16

WORKING EXPENSES AND REPAIRS.

EXPENSES AT PUMPING WORKS.

		Cash Payment.	True Cost.
Salary of Engineer and two assistants	$4,791.61		
Labor	9,391.81		
Coal, 2680 tons, 1456 lbs	21,880.51		
Coal for workshop, 35 tons, 800 lbs	309.60		
Oil and tallow	932.73		
Hydrant castings	5,145.00		
Brass castings	2,066.54		
Bar iron, nuts, steel, rivets and washers	1,490.04		
Gasket and packing	141.93		
Carpenter work	34.50		
Waste	218.54		
Lead	178.28		
Gas	176.35		
Hardware	60.86		
Amount carried forward	$46,818.30		

			Cash Payment.	True C
Amount brought forward		$46,818.30		
Hay, oats and feed		59.85		
Leather		35.85		
Quicksilver		26.75		
Files		24.53		
Wire cloth		24.00		
Gateway lamp		20.00		
Hauling ashes		18.00		
Office chairs		18 50		
Horse-shoeing		17.65		
Rubber clothing		15.00		
Shovels		13.50		
Drawing paper and tracing cloth		12.00		
Tubing		10.88		
Masonry work		9.25		
Blank-books		7.70		
Hose		7.00		
Chain		6.50		
Miscellaneous		98.63	$47,243.89	
ADD—				
Coal used, previously paid for		$8,773.18		
DEDUCT—				
Coal sold	$573.74			
Hydrants and stop-cocks sold,	400.00			
Wrenches, hydrant bends and labor	91.08			
Labor & materials for tunnel	316.51			
Hydrants, stop-cocks and labor used for, and charged to, extension, repairs, and other water accounts	10,197.41			
Stock on hand, in excess of April 1, 1865	193.01	11,771.75		
		2,998.57		$44,245.
IMPROVEMENTS AT RESERVOIRS.				
Filling about North Reservoir		$1,468.72		
Sidewalk at West Reservoir		229.25		
Coping wall "		20.40		
Trees at "		141.63		
Gateway at "		39.37		
Lumber for steps "		178.61		
Labor at "		156.00		
Amounts carried forward		$2,233.98	$47,243.89	$44,245.

		Cash Payment.	True Cost.
Amounts brought forward.....	$2,233.98	$47,243.89	$44,245.32
Painting fence at West Reservoir.....	57.60		
Posts for " "	8.00		
Carpenter work.....	12.00		
Hardware	9.23		
Brooms	9.00		
Grass Seed.....	2.25	2,332.06	
Add—			
Labor at shop on reservoir stairs.....	$218.25		
Labor at shop on West reservoir fence..	45.20		
	$263.45		2,595.51

REPAIRS OF PIPES, HYDRANTS, STOP-COCKS, AND MISCELLANEOUS OPERATING EXPENSES.

Wages of caulkers and laborers on hydrants, stop-cocks, and operating pipe,	$14,520.98		
Clearing ice from inlet.....	5,894.54		
Dredging inlet basin.....	3,000.00		
Making new boxes.....	789.22		
Hydrant Inspectors and Water Police..	4,226.68		
Lumber	1,160.39		
Nails and spikes.....	187.57		
Brick	909.53		
Cement	651.85		
Branches, sleeves, caps, and tapers.....	490.43		
Re-paving	353.25		
Hay, oats and feed.....	262.65		
Pipes	250.00		
Lead.....	181.61		
Covers and bottoms for catch basins...	113.00		
Drain pipe.....	104.60		
New harness and repairing harnesses..	85.80		
Repairing wagon.....	87.67		
Horse-shoeing.....	53.65		
Bar iron and steel.....	15.20		
Hardware.....	25.60		
Tape measures.....	30.00		
Wheelbarrows.....	90.75		
Tools	47.00		
Wood.....	30.41		
Coal.....	128.25		
Salt.....	28.50		
Amounts carried forward.....	$33,719.13	$49,575.95	$46,840.83

			Cash Payment.	True Cost
Amounts brought forward		$33,719.13	$49,575.95	$46,840.83
Brooms		12.50		
Expense of sale of bonds		62.15		
Express charges on bonds		115.75		
Lanterns		22.15		
Rubber clothing		90.00		
Repairing brakewater at inlet		106.68		
Pumps		41.10		
Costs on water, tax warrant		24.65		
Rent of stable lot		16 67		
Stable building		26.67		
Mourning goods for engine house		24.82		
Repairs at West reservoir		20.50		
Repairs at North reservoir		18.00		
Repairing hydrants		14.35		
Stone		12.75		
Miscellaneous		52.70	$34,380.57	
Add—				
Hydrants used		$2,583.00		
Stop cocks used		405 79		
Labor at shop		180.32		
Watching inlet, tunnel, engine house, and lot		1,453.50		
Watching reservoirs		150.00		
Depreciation on meters		2,152.00		
" on stock and tools		387.15		
		$7,311.76		
Deduct—				
Received for shutting off and letting on water	$223.65			
Materials sold	58.00			
Labor for private parties	57.35			
Sand sold	7.50	346.50		
		$6,965.26		$41,345.83
WATER METERS.				
26 meters, fittings, etc		$3,779.50		
Repairs and setting		1,365.55		
Machinist		499 98		
Express and freight charges		229.00		
New wagon		234.00		
Carpenter work		98.50		
Amounts carried forward		$6,206.53	$83,956.52	$88,186.66

		Cash Payment.	True Cost.
Amounts brought forward	$6,206.53	$83,956.52	$88,186.66
Lumber	60.00		
Castings	60.95		
Tools	41.99		
Fitting up shop	40.20		
Hay, oats and feed	38.03		
Horse-shoeing	15.75		
Repairing wagon	15.70		
Hardware	7.10		
Tape measure	6.00		
Exchange on draft	3.00	6,495.25	
Deduct—			
Valuation of meters charged stock	$3,700.00		
Labor for United States	10.00		
	$3,710.00		
Add—			
Labor at shop	60.61		
	$3,649.39		2,845.86

OFFICE EXPENSES AND SALARIES.

Salaries—Commissioners	$3,000.00		
Secretary	900.00		
City Engineer	1,500.00		
Assistant Engineers and Superintendent	1,200.00		
Clerks	2,054.22		
Water Assessors and Collectors	5,341.57		
Draughtsman	1,470.55		
Printing, including report	885.84		
Blank books and stationery	431.28		
Printing bonds	158.60		
Labor	636.90		
Revenue and postage stamps	79.34		
Advertising	631.69		
Newspapers and scientific works	36.79		
Assessor's stable	52.49		
Hay, oats and feed for Assessor's horse,	68.74		
Horse-shoeing	35.05		
Repairing Assessor's wagon	16.55		
Repairing harness	10.00		
Locks and keys, and repairing do	14.47		
Repairing at office	51.02		
Furniture	32.58		
Amounts carried forward	$19,507.68	$90,451.77	$91,032·52

		Cash Payment.	True Cost.
Amounts brought forward	$19,507.68	$90,451.77	$91,032.52
Water rate books	116.00		
Express on bonds	119.20		
Telegrams about bonds	17.91		
Tape measure	6.00		
Tracing and drawing paper	11.16		
Hardware	4.40		
Ice	17.50		
Coal	22.60		
Mourning Goods	42.94		
Miscellaneous items	102.21	19,967.60	
Deduct—			
Mourning goods sold	6.62		19,960.98
Total operating expenses		$110,419.37	$110,993.50

WATER LOAN INTEREST.

Interest on Water Loan Bonds, July 1, 1865, and January 1, 1866	$86,720.00		
Commissions to Duncan, Sherman & Co.	196.36		
Interest on Temporary Loan	3,532.19		
Premium on New York Drafts	54.99	$90,503.54	
Add—			
Amount Transferred from Discount	$3,264.76		
Deduct—			
Accrued interest on Bonds sold	2,785.79		
	$478.97		$90,982.51

INCOME.

Rents erroneously paid, refunded		59.50	59.50

STOCK.

Valuation of Meters furnished	$3,700.00		
Deduct—			
Depreciation of Meters	$2,152.00		
" of Tools	387.15	2,539.15	1,160.85

COAL.

Coal purchased not used		10,915.88	10,915.88
Amounts carried forward		$101,478.92	$103,118.74

			Cash Payment.	True Cost.
Amounts brought forward			$101,478.92	$103,118.74
BONDS.				
Advance on Bonds			26,000.00	26,000.00
TEMPORARY LOAN.				
Paid Loan			91,540.00	91,540.00
S. FULTON & CO.				
Overcharge of Freight (since refunded)			100.00	100.00
WATER PIPES.				
Pipes purchased and not used			29,214.53	29,214.53
SERVICE COCKS.				
Service of Tapper		$863.25		
Service Cocks purchased		2,542.20		
Cast Iron Boxes		2,355.89		
Hay, Oats and Feed		169.80		
Carpenter Work		32.00		
Horse Shoeing		21.02		
Permits		25.00		
Tape Measures and Wrench		24.00		
Labor		41.92		
Repairing Wagon		82.80		
Repairing Taps		19.90		
Oil and Salt		3.00	6.180.78	
		$6,180.78		
Add—				
Service Cocks previously paid for		1,410.84		
Labor at Shop		38.54		
		$7,630.16		7,630.16
Cash receipts for Tapping	$7,371.95			
Stop Cock sold	4.10			
Service Cock on hand Ap'l 1, 1866	927.98			
Profit on Service Cock account		673.87		
	$8.304.03	$8.304.03		
Amounts carried forward			$254,514.23	$257,603.43

	Cash Payment.	True Cost.
Amounts brought forward.....	$254,514.23	$257,603.43
Total addition to Water Works brought forward, (not including Lake Tunnel and New Engine, &c.)	116,581.10	146,332.23
Lake Tunnel expenditures brought forward.....	217,850.16	230,220.08
Expenditure for New Engine, Well Chamber and New Engine House brought forward.....	34,252.72	36,369.16
Total operating expenses brought forward.....	110,419.37	110,993.50
	$733,617.58	$781,518.40

Total cash expenditures..... $733,617.58

SEWERAGE DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1866.

	Dr.	Cr.
Sewers North Division	$293,380.95	
Sewers South Division	385,264.75	
Sewers West Division	441,588.37	
Haley Slough	72.14	
S. Lind, Treas. Sewerage Commissioners	106,906.73	
Sewerage Loan Bonds, 6 per cent		$ 87,000.00
Sewerage Loan Bonds, 7 per cent		1,149,000.00
Sewerage Loan Bonds Canceled		118,000.00
Sewerage Sinking Fund		40,865.46
Sewerage Sinking Fund Mortgages	5,867.10	
Discount on Sewerage Bonds	19,109.21	
Sewerage Loan Interest		34,070.17
Busch & Brand		626.37
Sewerage Pipes	5,056.35	
Sewerage Brick	166.60	
Sewerage Stock	2,961.25	
American Exchange Bank	42,758.50	
House Drains	14,678.51	
Dennis Coughlin	1,561.51	
Galena & Chicago Union Railroad Co		382.55
Sewerage Fund in hands of City Treasurer	97,643.83	
Lot 11, Block 2, Wolcott's Addition	21.38	
E. ½ Lot 10, Block 2. Wolcott's Addition	21.38	
W. ½ Lot 8, Block 12, Kinzie's Addition	22.74	
Cement Account	157.86	
Sewerage Sinking Fund with City Treasurer	711.12	
E. ½ Lot 3, Block 4, Kinzie's Addition	68.50	
S. ½ Lot 5, Block 123, School Section Addition	22.18	
Pittsburgh, Fort Wayne & Chicago Railway Co.		616.84
Z. Cobb, Agt., 80 ft. W. ½ Lot 7, Block 35, O. T.	31.53	
Chicago, Burlington & Quincy Railway Co.		6,744.01
Sewerage Manhole and Catch Basin Covers	2,319.51	
Sewerage Expenses and Repairs	16,357.61	
Owners Lots 1, 2, 7, and 8, Block 5, J. R. & Storr's Addition	94.54	
Wabash Avenue Drains	461.25	
	$1,437,305.40	$1,437,305.40

SEWERAGE FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1, 1865, to March 31, 1866, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time :

RECEIPTS.

Proceeds of 167 seven per cent bonds sold, including interest	$159,117.80	
Received from City account of Sewerage Tax, 1865	113,013.13	
House drain permits issued	6,521.25	
Materials sold	1,599.48	
Labor for other departments	646.26	
Temporary loan	20,000.00	
Amount paid for cleansing river refunded	14,802.86	
Interest on J. W. Cochrane's note—S. Lind	210.00	
Busch & Brand for sewer on Cedar street	626.37	
Mourning goods sold	6.63	
	$316,543.78	
Balance in hands of City Treasurer, April 1, 1865,	87,324.17	$403,867.95

EXPENDITURES.

SEWERS—SOUTH DIVISION.

		Cash Payment.	True Cost.
Services of Engineers	$1,263.43		
Labor	2,369.75		
Cement	370.03		
Brick	254.36		
Lumber	8.31		
Repairing tools	13.32		
Horse keeping	66.41		
Tape measures	8.63		
Amount carried forward	$4,354.24		

			Cash Payment.	True Cost.
Amount brought forward		$4,354.24		
Rent of stable lot		16.66		
Advertising		17.51		
Miscellaneous		8.64	$4,397.05	
Add—				
Pipe used	$528.35			
Brick used	96.92			
Depreciation in tools	79.23			
Cement used	103.38			
Discount on bonds sold	1,619.60			
Expense sewer on 22d st	4,061.37			
" " Indiana av.	1,050.00			
" " State st.	9,098.20			
" " Michig'n av.	2,565.06			
" " Prairie av.	8,032.76	$27,234.87		
Deduct—				
Receipts for work done		102.00		
		$27,132.87		$31,529.92

SEWERS—WEST DIVISION.

Services of Engineers		$1,208.12		
Labor		6,083.24		
Cement		957.78		
Brick		645.80		
Horse keeping		35.19		
Lumber		8.30		
Tape measures		8.64		
Advertising		42.25		
Rent of stable lot		8.33		
Repairing tools		13.32		
Miscellaneous		25.03	9,036.00	
Add—				
Covers used	$ 60.00			
Pipe used	1,899.50			
Brick used	96.92			
Depreciation in tools	79.23			
Cement used	103.38			
Discount on bonds sold	1,719.80			
Expense sewer Harrison st.	1,093.38			
" " Sheldon st.	715.89			
" " Aberdeen st.	3,090.20			
Amounts carried forward		$8,858.30	$13,433.05	$31,529.92

			Cash Payment.	Trust
Amounts brought forward,		$8,858.30	$13,433.05	$31,52
Expense sewer Sangamon st.	2,516.58			
" " Morgan st.	895.78			
" " Milwaukee av.	12,662.83			
" " Throop st.	1,022.03			
" " Ann st.	1,224.31			
" " Curtis st.	2,120.93			
" " W. Indiana st.	2,202.83			
" " Randolph st.	28,904.70			
" " Washington st.	1,830.86	62,239.15		
Deduct—				
Amount erroneously charged in 1864,		69.00		
		$62,170.15		71,20

SEWERS—NORTH DIVISION.

Services of Engineers		$ 960.43		
Labor		3,187.01		
Repairing tools		13.31		
Lumber		8.31		
Horse keeping		35.17		
Brick		531.20		
Cement		489.62		
Tape measures		14.63		
Advertising		17.48		
Miscellaneous		8.84	5,266.00	
Add—				
Covers used	$ 50.00			
Brick used	96.91			
Depreciation in tools	79.23			
Cement used	103.38			
Pipe used	1,049.59			
Discount on bonds sold	1,195.85			
Expenses sewer Clybourn av.	5,211.91			
" " North av.	7,794.01			
" " No. Clark st.	14,221.18	29,802.06		
Deduct—				
Brick sold water dept	$135.36			
Labor for N.C.City R.W.Co.	25.75	$161.11		
		29,640.95		34,90
Amounts carried forward			$18,699.05	$137,643

		Cash Payment.	True Cost.
Amounts brought forward		$18,699.05	$137,643.02
CLEANSING SEWERS—SOUTH DIVISION.			
Labor	$4,112.56		
Water used for flushing	186.12		
Repairing wagon and tools	53.48		
Tools	51.74		
Oil clothing	15.25		
Candles	1.47		
Lumber	6.67	4,427.29	
Add—			
Depreciation in tools	$79.24		
Deduct—			
Labor for private parties	22.50	$56.74	4,484.03
CLEANSING SEWERS—WEST DIVISION.			
Labor	$5,333.07		
Water used for flushing	186.12		
Repairing wagon and tools	53.47		
Tools	45.50		
Oil clothing	15.25		
Candles	1.47		
Oil and Salt	15.25		
Cement	3.50	5,653.63	
Add—			
Depreciation in tools	$79.24		5,732.87
CLEANSING SEWERS—NORTH DIVISION.			
Labor	$3,204.47		
Water used for flushing	186.12		
Repairing wagon and tools	53.45		
Tools	45.58		
Oil clothing	15.00		
Candles	8.91		
Oakum	8.50	3,521.93	
Add—			
Depreciation in tools	$79.24		3,601.17
REPAIRS OF SEWERS—SOUTH DIVISION.			
Labor	$1,715.63		
Cement	190.09		
Amounts carried forward	$1,905.72	$32,301.90	$151,461.09

		Cash Payment.	True
Amounts brought forward	$1,905.72	$32,301.90	$151,46
Brick	160.98		
Repairing wagon and tools	27.98		
Stone	33.00	2,127.68	
Add—			
Covers used	$1,334.79		
Brick used	96.92		
Depreciation in tools	79.24		
	$1,510.95		3,63

REPAIRS OF SEWERS—WEST DIVISION.

Labor	$1,167.56		
Cement	170.85		
Brick	41.52		
Repairing wagon and tools	25.02	1,404 95	
Add—			
Covers used	$386.08		
Brick used	96.91		
Depreciation in tools	79.24		
	$562.23		1,96

REPAIRS OF SEWERS—NORTH DIVISION.

Labor	$1,196.13		
Cement	107.50		
Repairing wagon and tools	25.00		
Acid	4.72		
Stone	6.25	1,339.60	
Add—			
Covers used	$372.00		
Brick used	96.91		
Depreciation in tools	79.24		
	$548.15		1,88

HOUSE DRAINS.

Services of draughtsman	$ 930.54		
Inspecting	1,444.00		
Setting junctions	79.94		
Amounts carried forward	$2,454.48	$37,174.13	$158,95

		Cash Payment.	True Cost.
Amounts brought forward.....	$2,454.48	$37,174.13	$158,954.65
Advertising drain notices.....	736.95		
Printing notices and ordinances.....	86.25		
Permit returned.....	5.00		
Draughtsman's scale.....	2.50		
Hay.....	10.44		
Car fares.....	21.55	3,317.17	
Deduct—			
Received for permits.....	$6,521.25		
" " advertising.....	24.00		
	$6,545.25		
Add—			
Pipe junctions used.....	1,800.59		
	$4,744.66		1,427.49

MAN HOLE AND CATCH BASIN COVERS.

Labor.....	$1,910.26		
Lumber and freight.....	3,019.03		
Nails and spikes.....	476.84		
Tar.....	125.00		
Rope, twine and brooms.....	26.02	5,557.15	
Deduct—			
Covers sold.....	$ 43.10		
Covers used for sewers and repairs..	3,784.01		
Covers used by water department ...	352.20		
	$4,179.31		1,377.84

OFFICE EXPENSES AND SALARIES.

Salaries of Commissioners.....	$3,000.09		
Salary of Secretary.....	875.00		
" " City Engineer.....	1,425.00		
" " Ass't Engineer and Sup't....	1,125.00		
" " Clerks.....	2,825.87		
Blank books and stationery.....	392.81		
Advertising.....	35.00		
Printing, including report April 1, 1865.	270.02		
Revenue and postage stamps.....	58.33		
Daily papers and scientific works.....	36.79		
Office furniture.....	36.78		
Repairs.....	50.26		
Amounts carried forward.....	$10,130.86	$46,048.45	$161,759.98

		Cash Payment.	True C
Amounts brought forward	$10,130.86	$46,048.45	$161,759
Expense of sales of bonds	62.14		
Express on bonds	119.20		
Stable	30.86		
Painting	6.82		
Fuel	23.52		
Ice	17.50		
Mourning Goods	42.94		
Miscellaneous	108.62	10,542.46	
Deduct—			
Mourning goods sold	$6.63		10,535
HALEY SLOUGH.			
Service of engineers	$38.89		
Rodman	26.00		
Miscellaneous expenses	7.25	72.14	
SEWERAGE INTEREST.			
Interest on sewerage loan bonds July 1, 1865, and Jan. 1, 1866	$78,615.00		
Interest on temporary loan	183.32		
Commission to American Exc. Bank	196.53		
Premium on drafts	55.05		
Overdraft for proceeds of bonds	60.00	79,109.90	
Deduct—			
Accrued interest on bonds sold	$292.00		78,817.
SEWERAGE PIPES.			
Pipe purchased	$5,095.22		
Labor	161.50		
Advertising for proposals	66.74	5,323.46	
SEWERAGE BRICKS.			
Brick purchased	$1,171.59		
Labor	128.37		
Advertising	78.76	1,378.72	
Deduct—			
Brick sold	$694.63		
Amounts carried forward		$142,475.13	$251,113

		Cash Payment.	True Cost.
Amounts brought forward		$142,475 13	$251,113.71
SEWERAGE STOCK.			
Tools	$106.08		
Lumber for sheeting	412.42	518.50	
CEMENT ACCOUNT.			
Cement purchased		165.31	
MICHIGAN AVENUE SEWER. 736 FEET. 2 FEET SEWER.			
Gladding & Fuller, on contract	$1,219.92		
Brick	1,007.83		
Labor	162.88		
Cement	52.50		
Inspecting	52.00	2,495.13	
Add—			
Covers used	$58.68		
Pipe used	11.25		
	$69.93		
STATE STREET SEWER. 1372 FEET. 5 FEET SEWER.			
Gladding & Fuller, on contract	$4,256.63		
Brick	3,844.32		
Labor	685.00		
Inspecting	156.00		
Cement	93.75	9,035.70	
Add—			
Covers used $40.00, pipes used $22.50.	$62.50		
TWENTY-SECOND STREET SEWER. 820 FEET. 3 FT., AND 1800 FT. 2 FT.			
M. Mulany, constructing sewer	$2,081 64		
Brick	775.16		
Inspecting	170.00		
Labor	416.87		
Cement	107.50		
Car fares	2.30		
Building dock at river	273.00	3,826.47	
Add—			
Covers used	$185.90		
Pipe used	49.00		
	$234.90		
Amounts carried forward		$158,516.24	$251,113.71

		Cash Payment.	True Cost.
Amounts brought forward		$158,516.24	$251,113.71
PRAIRIE AVENUE SEWER. 1363 FT. 2½ FT., AND 1292 FT. 2 FT.			
Gladding & Fuller, on contract	$5,821.70		
Brick	1,095.95		
Labor	343.25		
Inspecting	276.00		
Services of engineer	116.67		
Cement	124.25	7,777.82	
Add—			
Covers used	$224.94		
Pipe used	30.00		
	$254.94		
INDIANA AVENUE SEWER.			
Brick		1,050.00	
RANDOLPH STREET SEWER. 4090 FT. 4½ FT., AND 400 FT. WING.			
W. Woodruff, constructing sewer	$14,315.00		
" " 400 ft. wing sewer.	600.00		
Labor	2,180.61		
Brick	10,926.98		
Inspecting	550.00		
Services of engineer	42.36		
Water used for flushing	20.00		
Cement	12.50	28,647.45	
Add—			
Covers used	$158.25		
Pipe used	99.00		
	$257.25		
Deduct—			
Brick sold	7.50		
	$249.75		
MILWAUKEE AVENUE SEWER. 2234 FT. 4½ FT., AND 308 FT. WING.			
W. Woodruff, on contract	$6,990.50		
Brick	4,451.75		
Services of engineer	42.35		
Inspecting	292.00		
Amounts carried forward	$11,776.60	$195,991.51	$251,113.71

		Cash Payment.	True Cost.
Amounts brought forward	$11,776.60	$195,991.51	$251,113.71
Labor	705.94		
Cement	26.25		
Water for puddling	20.00	12,528.79	
Add—			
Covers used	$84.54		
Pipe used	49.50		
	$134.04		
WEST INDIANA STREET SEWER. 360 FEET. 4 FT. SEWER.			
W. Woodruff, constructing sewer	$ 900.00		
Brick	1,149.08		
Labor	132.50	2,181.58	
Add—			
Covers used	$10.00		
Pipe used	11.25		
	$21.25		
CURTIS STREET SEWER. 885 FEET. 2 FT. SEWER.			
M. Mulany, constructing sewer	$1,460.25		
Brick	389.18		
Inspecting	50.00		
Labor	101.00		
Cement	21.25	2,021.68	
Add—			
Covers used	$70.00		
Pipe used	29.25		
	$99.25		
ANN STREET SEWER. 498 FEET. 2 FT. SEWER.			
M. Mulany, constructing sewer	$996.00		
Brick	115.56		
Inspecting	71.50	1,183.06	
Add—			
Covers used	$30.00		
Pipe used	11.25		
	$41.25		
Amounts carried forward		$213,906.62	$251,113.71

		Cash Payment.	True Cost.
Amounts brought forward		$213,906.62	$251,113.71
THROOP STREET SEWER. 492 FEET. 2 FEET SEWER.			
M. Mulany, constructing sewer	$910.20		
Labor	25.00		
Inspecting	33.33	968.53	
ADD—			
Covers used	$40.00		
Pipe used	13.50		
	$53.50		
MORGAN STREET SEWER. 455 FEET. 2 FEET SEWER.			
Langan & McHugh, constructing Sewer	$768.95		
Inspecting	49.33		
Labor	24.00	842.28	
ADD—			
Covers used	$40.00		
Pipe used	13.50		
	$53.50		
SANGAMON STREET SEWER. 785 FEET. 2 FEET SEWER.			
Langan & McHugh, balance contract	$ 783.95		
M. Mulany, constructing Sewer	1,399.60		
Brick	107.86		
Inspecting	58.67		
Labor	44.00	2,394.08	
ADD—			
Covers used	$100.00		
Pipe used	22.50		
	$122.50		
ABERDEEN STREET SEWER. 955 FEET. 2 FEET SEWER.			
M. Mulany, constructing Sewer	$1,187.50		
W. Woodruff, on contract	1,227.50		
Brick	427.45		
Inspecting and labor	139 50		
Cement	18.00	2,999.95	
Amounts carried forward		$221,111.46	$251,113.71

		Cash Payment.	True Cost.
Amounts brought forward		$221,111.46	$251,113.71
Add—			
Covers used	$70.00		
Pipes used	20.25		
	$90.25		
SHELDON STREET SEWER. 332 FEET. 2 FEET SEWER.			
M. Mulany, constructing Sewer	$630.80		
Inspecting and Labor	39.34	670 14	
Add—			
Covers used	$30.00		
Pipes used	15.75		
	$45.75		
HARRISON STREET SEWER. 283 FEET. 4½ FT. SEWER.			
Langan & McHugh, constructing Sewer	$995.50		
Inspecting and Labor	69.33	1,064.83	
Add—			
Covers used	$10.55		
Pipe used	18.00		
	$28.55		
WASHINGTON STREET SEWER.			
W. Woodruff, on account contract	$900.00		
Brick	800.00		
Labor	130.86	1,830.86	
NORTH CLARK STREET SEWER. 1875 FEET. 5 FT. SEWER.			
Langan & McHugh, on contract	$5,956.25		
Do. 200 ft. wing sewer.	650.00		
Brick	6,224.95		
Labor	786.09		
Inspecting	300.00		
Cement	35.00		
Water for flushing	20.00	13,972.29	
Add—			
Sheeting charged Langan & McHugh,	$137.50		
Covers used	64.14		
Pipe used	47.25		
	$248.89		
Amounts carried forward		$238,649.58	$251,113.71

		Cash Payment.	True Cost.
Amounts brought forward		$238,649.58	$251,113.71
NORTH AVENUE SEWER. 1915 FEET. 4½ FT. SEWER.			
Langan & McHugh, on contract	$3,830.00		
Brick	3,135.09		
Labor	529.17		
Services of Engineer	42.36		
Inspecting	146.00		
Cement	2.25	7,684.87	
ADD—			
Covers used	$64.14		
Pipe used	45.00		
	$109.14		
CLYBOURN AVENUE SEWER. 1756 FEET. 2½ AND 2 FT.			
Langan & McHugh, on contract	$2,441.40		
Brick	2,176.26		
Inspecting	54.00		
Labor	181.75	4,853.41	
ADD—			
Covers used	$300.00		
Pipe used	58.50		
	$358.50		
MISCELLANEOUS.			
Amount paid to Sinking Fund for its proportion of Sewerage Tax, 1864		18,439.57	
Amount of tax of 1864 erroneously credited Sewerage Fund, refunded		1,023.92	
Paid Temporary Loan		20,000.00	
Paid for cleansing Chicago River as per statement of River Improvement Fund, (since refunded)		12,820.63	
Paid for construct'g private drains—to be refunded,		592.76	
Labor sinking Crib, (refunded)		406.00	
Percentage reserved on Contracts of 1864		1,753.38	
		$306,224.12	$251,113.71
Balance in hands of City Treasurer, April 1, 1866,		97,643.83	
		$403,867.95	

SEWERAGE SINKING FUND.

RECEIPTS.

Proportion of Sewerage Tax of 1864	$18,439.57	
Balance in hands of City Treasurer, April 1, 1865,	271.55	$18,711.12

EXPENDITURES.

Eighteen Bonds purchased and canceled, Nos. 1188 to 1205, inclusive, 7 per cent.....	$18,000.00	
Balance in hands of City Treasurer, April 1, 1866,	711.12	$18,711.12

RIVER IMPROVEMENT DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1866.

	Dr.	Cr.
River Improve't Fund in hands of City Treasurer,	$64,413.86	
Expenses of Survey previous to adoption of Plan,	1,269.23	
Expenses of Canal Survey.....	7,960.71	
River Improvement Salary Account.....	6,750.00	
River Improvement Office Expenses..... .	1,019.31	
Sanger, Steel & Co.....	3,256.00	
River Improvement Bonds, 7 per cent.....		$93,000.00
Discount on River Improvement Bonds.....	8,330.89	
	$93,000.00	$93,000.00

RIVER IMPROVEMENT FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1, 1865, to March 31, 1866, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds of 93 River Improvement Bonds, including accrued interest	$84,669.11

EXPENDITURES.

OFFICE EXPENSES AND SALARIES.

		Cash Payment.	True Cost.
Salaries of Commissioners	$6,000.00		
Advertising	134.22		
Stationery	7.25		
Engraving and printing bonds	188.50		
Advertising for proposals for bonds	351.39		
Express on bonds	92.50		
Printing specifications	22.00		
Office desk	23.50		
Office rent	73.61		
Coal	12.34		
Estimate books	13.00		
Book keeper	100.00		
Oil	1.00	$7,019.31	$7,019.31

EXPENSES OF SURVEY.

Engineers	$2,990.77		
Rodmen, axemen, and chainmen	3,502.30		
Expenses of engineers and party	431.22		
Amounts carried forward	$6,924.29	$7,019.31	$7,019.31

		Cash Payment.	True Cost.
Amounts brought forward,	$6,924.29	$7,019.31	$7,019.31
Lumber	191.56		
Hardware	61.73		
Scows (2)	290.57		
Bedding for scows	148.68		
Kitchen ware for scows	98.50		
Roofing scows	27.30		
Stools	9.00		
Surveyors' chains	34.76		
Tools	61.06		
Rope and lead	10.50		
Tape measure	7.00		
Profile paper	4.50		
Examining route	69.05		
Miscellaneous expenses	22.21	7,960.71	7,960.71
MISCELLANEOUS.			
Sanger, Steele & Co., on account of contract		3,256.00	3,256.00
Items paid from Sewerage Fund previous to April 1st, 1865, as shown by "Fourth Annual Report,"		1,982.23	1,982.23
Advertising for plans previous to adoption of plan,		37.00	37.00
		$20,255.25	$20,255.25
Balance in hands of Treasurer, April 1, 1866		64,413.86	
		$84,669.11	

CITY DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1866.

	Dr.	Cr.
City Appropriation Fund (amount unexpended)..	$30,862.97	
South Division	14,793.52	
West Division	8,111.45	
North Division	10,335.25	
South Division Sidewalks		$2,759.01
West Division Sidewalks		589.32
North Division Sidewalks		2,403.74
Dredging Goose Island		3,797.77
Lake Park		4,885.50
Jefferson Park		143.36
Union Park		3,791.24
Lincoln Park		5,453.95
Dearborn Park		434.00
Public Parks Account		826.79
Hospital on Cemetery Grounds		1,471.31
Street Lamps—West Division		189.10
Washington Street Tunnel	245.00	
Dock Line Survey	4,219.28	
Public Buildings Account		10,239.72
Chicago Cemetery		2,362.23
Sidewalks west side of Cemetery		500.64
Lumber Account	442.80	
Office Expense Account	7,027.39	
Chicago Harbor		1,511.08
Street Intersections		49,858.44
Twelfth Street Bridge		12,000.00
North Market	1,519.48	
Fuller Street Bridge	7,298.85	
North Avenue Bridge	4,883.44	
Stone Account	822.63	
Straightening North Clark Street		50.00
Dredging Mouth of Harbor	47,227.49	
Special Appropriation		70,849.05
North Pier Extension	38,440.53	
City proportional Expense Account		624.08
House Numbers		774.67
Bridge Department		715.08
	$176,230.88	$176,230.88

BOARD OF PUBLIC WORKS APPROPRIATION FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1, 1865, to March 31, 1866, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time :

RECEIPTS.

Amount appropriated by Common Council	$331,975.00	
Permits issued.....	875.00	
Digging Graves in Cemetery and Sand sold	1,382.05	
Received for House Numbers.....	2,994.50	
Lumber sold.....	235.20	
Damages to Bridges.....	418.95	
Piles sold.....	27.30	
Old Flooring sold.....	15.00	
Received from Special Assessments for expenses..	125.00	
Received for Lamp posts	72.00	
Repaving streets and repairing walks	594.99	
Paid by U. S. for repairs on City Hospital.....	1,143.25	
Paid by Cook County for repairs on Court House,	655.63	
Received for Carpenter work on Engine Houses..	424.27	
Received for hay sold from Union Park.....	146.12	
Received for Labor.....	88.73	
Received for gravel and sand sold	138.20	
Received for Licenses and Scale permits.....	81.00	
Received for nails.....	65.29	
Constructing drain at Bridewell.....	106.00	
Received for miscellaneous items.....	22.13	
	$341,585.61	
Balance in hands of City Treasurer, April 1, 1865,	44,828.76	$386,414.37

EXPENDITURES.

SOUTH DIVISION.

		Cash Payment.	True Cost.
Labor on streets and walks	$30,256.89		
Sidewalk Inspectors	2,046.00		
Lumber	2,919.73		
Stone and gravel	3,237.65		
Tools	79.59		
Repairing tools	91.45		
Tape measures	21.25		
Sprinkling front of Dearborn Park	204.00		
Rent of stable lot	8.33		
Wall cor. Wells and Randolph streets	79.50		
Special constable	375.00		
Nails and spikes	470.05		
Grading streets	1,071.00		
Ripping Lumber	88.96		
Seventeen barrels composition	121.50		
Street signs	93.92		
Repairing wagon	25.66		
Rent of lumber lot	108.00		
South Division pound	204.53		
Cinders	112.50		
Miscellaneous	51.24	$41,666.75	
DEDUCT—			
Permits issued	$291.64		
Repairing walks	145.82		
Repaving	388.27		
Repairing fence	24.00		
Labor	25.00		
Gravel and stone sold	138.20		
Lumber and nails	49.29	$1,062.22	$40,604.53

WEST DIVISION.

Labor on streets and sidewalks	$30,246.71		
Sidewalk Inspectors	2,800.00		
Special constable	225.00		
Lumber	6,051.88		
Stone	4,001.41		
Tools	68.55		
Repairing tools	87.65		
Amounts carried forward	$43,481.20	$41,666.75	$40,604.53

			Cash Payment.	True Cost.
Amounts brought forward		$43,481.20	$41,666.75	$40,604.53
Nails and spikes		855.02		
Ripping lumber		16.69		
Street signs		114.16		
Miscellaneous		54.02	44,521.09	
Add—				
Lumber previously paid for	$128.18			
Inspecting on Canal street	31.73	$159.91		
Deduct—				
Permits issued	$291.66			
Labor	63.15			
Lamp post	30.00			
Nails	34.00	418.81		
		$258.90		44,262.19
NORTH DIVISION.				
Labor on streets and sidewalks		$22,629.19		
Sidewalk inspectors		1,800.00		
Special constable		225.00		
Lumber		2,037.73		
Stone		1,531.78		
Nails and spikes		349.25		
Tools		55.75		
Repairing tools		14.00		
Railing at Clark street bridge		18.37		
Setting lamp post		8.50		
Street signs		70.67		
Sand		7.50		
Pound		79.57		
Ripping lumber		3.41		
Miscellaneous		27.16	28,857.88	
Deduct—				
Permits issued	$291.70			
Lamp post	30.00			
Labor	13.48	$335.18		28,522.70
CHICAGO CEMETERY.				
Labor		$2,721.50		
Tools		19.25		
Amounts carried forward		$2,740.75	$115,045.72	$113,389.42

		Cash Payment.	True Cost.
Amounts brought forward.....	$2.740.75	$115.045.72	$113,389.42
Lumber	8.50		
Nails	8.00		
Advertising	41.25	2,798.50	
Deduct—			
Rec'd for digging graves,...	$1,100.00		
Sand and gravel sold.....	282.05	$1,382.05	1,416.45

SIDEWALK WEST SIDE OF CHICAGO CEMETERY.

Constructing 3052 feet walk.....	$974.60		
Advertising for proposals.....	24 76	999.36	

LUMBER ACCOUNT.

Lumber purchased, not used	$573.89	573.89	
Deduct—			
Lumber sold	217.20		356.69

STONE ACCOUNT.

Stone purchased, not used.....		822.63	

PUBLIC BUILDINGS.

COURT HOUSE AND SQUARE.

Repairs in engine room.....	$ 9.25		
Repairs in Recorder's Court room	13.67		
Repairs in Council chamber.	7.00		
Repairing roof and dome	521.57		
Repairing water closet.....	8.15		
Repairing gas fixtures	14.00		
Water closet under steps.....	549.42		
Fitting pipe in cupola	26.55		
Lumber for cupola	32.00		
Basins in Clerk's and Comptroller's offices.....	153.46		
Setting glass.....	68.10		
Stone, and laying the same.....	716.66		
Setting post...	13.00		
Reparing fence.....	3.50		
Miscellaneous expenses.....	10.10	2,146.43	
Amounts carried forward.....		$122,386.53	$115,162.56

		Cash Payment.	True Cost.
Amounts brought forward		$122,386.53	$115,162.56
Deduct—			
Received from Cook county for repairs, $655.63			1,490.80
ARMORY.			
Carpenter work	$92.61		
Setting glass	40.70		
Repairs	23.35		
Hardware	8.14		
Plumbing	7.20	172.00	172.00
BRIDEWELL.			
Constructing drain	$106.00		
Nails and hardware	54.55		
Carpenter work	50.00		
Lumber	40.00		
Plumbing	33.95		
Setting glass	21.98	306.48	
Deduct—			
Received for constructing drain	$106.00		200.48
ENGINE HOUSES.			
Carpenter work	$410.04		
Rebuilding stable	74.32		
Roofing bell towers	55.00		
Repairs	17.12		
Bell tower on Fourth avenue	300.00		
Bell tower on Milwaukee avenue	300.00		
Hanging bells	54.45		
Numbers	1.00	1,211.93	
Deduct—			
Received for carpenter work	$424.27		787.66
NORTH MARKET.			
Painting and calsomining	$220.70		
Roofing	76.59		
Repairs	63.00		
Setting glass	13.20	373.40	373.40
Amounts carried forward		$124,450.34	$118,186.90

		Cash Payment.	True Cost.
Amounts brought forward		$124,450.34	$118,186.90
NORTH MARKET—RAISING.			
T. Mackin, balance contract	$2,121.21		
Building wall	269.74	2,390 95	2,390.95
CEMETERY HOSPITAL.			
Watching Hospital	$136.62		
Building outhouses	96.97		
Tinning around chimneys	36.00		
Repairing roof and doors	39.00		
Labor on fence	13.50		
Lumber	8.17		
Advertising for proposals	5.25	335.51	335.51
BRIDGE DEPARTMENT.			
Carpenter work	$7,515.70		
Driving piles	430.00		
Police badges	48.00		
Mourning goods	164.63		
Hauling coal	13.87		
Chain	46.07		
Lumber	2,435.30		
Nails and spikes	518.70		
Washers and hinges	24.04		
Gas fitting at State street	29.33		
Tools	58.25		
Windows for bridge houses	14.40		
Painting signs	20.00		
Cleaning reflectors	66.30		
Oil	454.70		
Castings	121.43		
Lamps and reflectors	199.17		
Horse keeping	37.75		
Draughtsman	121.50		
Oakum, rope, and cordage	135.90		
Wheelbarrows	24.50	12,640.53	
Deduct—			
Received for damages	$194.00		
Piles sold	27.30	$221.30	12,419.23
Amounts carried forward		$139,817.33	$133,332.59

		Cash Payment.	True Cost
Amounts brought forward		$139,817.33	$133,332.59
RUSH STREET BRIDGE.			
Tending bridge	$1,782.07		
Iron, nuts, and bolts	30.53		
Lumber	24.03		
Coal	20.90		
Crowbar	3.00		
Trimming abutment	2.50		
Lock	2.50		
Miscellaneous	1.28	1,866.81	
Deduct—			
Received for damages	$10.00		1,856.81
STATE STREET BRIDGE.			
Tending bridge	$1,780.00		
Labor on approach	381.90		
Stone for approach	87.50		
Painting bridge	500 00		
Lumber	116.04		
Gas fitting	16.51		
Lamps, lanterns, and cans	102.75		
Repairing center pier	161.38		
Repairing dock	119.06		
Coal	46.40		
Axes and iron	8.28		
Bridge house	47.05		
Stove and pipe	10.74		
Carpenter work	169.11		
Reflectors	20.00		
Bell	8.40	3,575.12	
Deduct—			
Received for damages to gas pipe	$10.50		3,564.62
CLARK STREET BRIDGE.			
Tending bridge	$1,730.00		
Lumber	239.36		
Coal	34.90		
Advertising	24.76		
Amounts carried forward	$2,029.02	$145,259.26	$138,754.02

		Cash Payment.	True Cost.
Amounts brought forward.....	$2,029.02	$145,259.26	$138,754.02
Shovels, lantern, and lock	15.00		
Stove and pipe.....	10.75		
Chain.....	10.52		
Oil.....	3.80		
Carpenter work.....	3.00	2,072.09	
Deduct—			
Old flooring sold...	$15.00		2,057.09

WELLS STREET BRIDGE.

Tending bridge	$1,730.00		
Turning and fitting center plate.....	127.20		
Lumber.....	15.00		
Coal.....	17.00		
Repairs.....	1.75	1,890.95	1,890.95

LAKE STREET BRIDGE.

Tending bridge	$1,661.48		
Lumber.....	21.45		
Coal.....	29.40		
Removing gas posts	11.70		
Stove and pipe....	9.00		
Miscellaneous expenses.....	7.08	1,740.11	1,740.11

RANDOLPH STREET BRIDGE.

Tending bridge	$1,587.99		
Lumber.....	163.72		
Painting bridge	378.00		
Repairing and painting house	56.20		
Shovels, hardware, and wheelbarrow...	12.34		
Stove and pipe	6.00		
Coal.....	37.90		
Damages to Schr. Hamlet.....	123.90	2,366.05	
Deduct—			
Received for damages.....	$150.00		2,216.05
Amounts carried forward.....		$153,328.46	$146,658.22

		Cash Payment.
Amounts brought forward		$153,328.46 $1
MADISON STREET BRIDGE.		
Tending bridge	$1,500.00	
Lumber	3.60	
Fastening railings	7.75	
Repairing truck	5.00	
Coal	23.20	
Can	35	1,539.90
VAN BUREN STREET BRIDGE.		
Tending bridge	$1,500.00	
Coal	23.20	
Bell	10.40	
Axe and lanterns	5.43	
Lumber	44.35	
Repairing center protection	582.50	2,165.88
POLK STREET BRIDGE.		
Tending bridge	$1,447.50	
Lumber	80.52	
Repairing house	29.30	
Rollers and castings	37.07	
Shovels, hatchet, and lanterns	12.75	
Chain	25.93	
Coal	33.65	
Repairing pump	4.70	1,671.42
TWELFTH STREET BRIDGE.		
Tending bridge	$1,462.50	
Lumber	36.84	
Repairs	10.96	
Shovel, axe, and lamps	7.50	
Chain	83.56	
Coal	17.00	1,618.36
Deduct—		
Received for damages	$54.45	
Amounts carried forward		$160,324.02 $1

		Cash Payment.	True Cost.
Amounts brought forward.....		$160,324.02	$153,599.33
OLD STREET BRIDGE.			
Tending bridge	$1,440.00		
Lumber.....	85.52		
Chain.....	140.13		
Pump.....	12.00		
Axe and lamp.....	3.75		
Coal	8.50	1,689.90	1,689.90
HALSTED STREET BRIDGE.			
Tending bridge	$1,010.00		
Lumber.....	34.18		
Coal.....	17.00		
Repairs...	5.00	1,066.18	1,066.18
ARCHER ROAD BRIDGE.			
Tending bridge	$543.00		
Lumber.....	5.00		
Stove and pipe.....	10.25		
Tools and lantern	8.75		
Coal.....	8.50		
Building house.....	95.00	670.50	670.50
REUBEN STREET BRIDGE.			
Tending bridge		270.00	270.00
FULLER STREET BRIDGE.			
N. Chapin, constructing bridge.....	$6,300.00		
Dredging and moving piles.....	500.00		
Painting bridge	350.00		
Interest on temporary loans.....	143.60		
Advertising for proposals	5.25		
Tending bridge	270.00	7,568.85	7,568.85
KINZIE STREET BRIDGE.			
Tending bridge	$1,390.00		
Lumber.....	138.14		
Amounts carried forward.....	$1,528.14	$171,589.45	$164,864.76

		Cash Payment.	True Cost.
Amounts brought forward	$1,528.14	$171,589.45	$164,864.76
Nails	24.00		
Coal	8.50		
Shovel, wheelbarrow, and can	6.20		
Repairing house	10.00	1,576.84	1,576.84

INDIANA STREET BRIDGE.

Tending bridge	$1,260.00		
Repairing bridge	455.95		
Towing bridge	24.00		
Chain	35.69		
Lumber	82.16		
Coal	23.20		
Iron drum	15.00		
Stove and pipe	11.28		
Axe	2.00		
Lantern and oil	5.15	1,914.43	1,914.43

ERIE STREET BRIDGE.

Tending bridge	$1,244.58		
Repairing bridge	361.40		
Repairing house	3.70		
Iron pump	12.00		
Shovel and crowbar	6.70		
Chain	74.35		
Lumber	99.95		
Towing bridge	10.00		
Coal	23.20	1,835.88	1,835.88

CHICAGO AVENUE BRIDGE.

Tending bridge	$1,232.08		
Lumber	120.07		
Chain	27.97		
Pump plunge and valve	2.00		
Setting glass	1.60		
Lantern	1.75		
Shovel and axe	4.50		
Stove pipe	4.40		
Nails	8.00		
Coal	23.20	1,425.57	1,425.57
Amounts carried forward		$178,342.17	$171,617.48

		Cash Payment.	True Cost.
Amounts brought forward		$178,342.17	$171,617.48
NORTH AVENUE BRIDGE.			
N. Chapin, constructing bridge	$3,700.00		
Pier protection	767.19		
Painting bridge	350.00		
Interest on temporary loan	61.00		
Tending bridge	800.00		
Advertising	5.25		
Coal	8.50		
Miscellaneous	3.35	5,695.29	5,695.29
CLYBOURN AVENUE BRIDGE.			
Tending bridge	$519.99		
Lumber	8.37		
Coal	8.50		
Setting glass	1.68	538.54	538.54
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners	$3,000.00		
Salary of Secretary	875.00		
Salary of City Engineer	1,425.00		
Salaries Superintend't and Asst. Eng'rs,	3,075.85		
Salaries of Clerks	4,185.53		
Salaries of Draughtsmen	1,121.39		
Stationery	255.74		
Printing, including annual report	599.88		
Coal	23.47		
Papers and books	36.73		
Blank books	116.21		
Repairs	63.07		
Revenue and postage stamps	58.33		
Furniture	34.75		
Advertising	4,398.20		
Commissioner's oaths	35.25		
Examining records	20.00		
Plans for river tunnel	488.00		
Surveyors' chains	20.00		
Drawing paper	20.00		
Amounts carried forward	$19,852.40	$184,576.00	$177,851.31

		Cash Payment.	T
Amounts brought forward	$19,852.40	$184,576.00	$177
Painting	6.81		
Mourning goods	42.94		
Miscellaneous expenses	153.49	20,055.64	
Deduct—			
Licenses and scale permits...$ 81.00			
Special assessment expenses.. 125.00			
Broken lamp posts 12.00			
Miscellaneous items 22.13	$240.13		19

HOUSE NUMBERS.

Draughtsman	$932.00		
Serving notices	900.00		
Clerk	90.28		
Certificates, receipts, and notices	147.00		
Numbers returned	4.50		
Damages altering numbers	30.00		
Miscellaneous	11.20	2,114.98	
Received for numbers	$2,994.50		
Net profits	879.52		

CHICAGO HARBOR.

Salary Harbor Master	$1,200.00		
Removing wrecks	867.25		
Dredging	900.91		
Constructing dock	252.12		
Constructing light on pier	167.96		
Horse	150.00		
Horse keeping and shoeing	145.18		
Towing	25.00		
Lumber	39.07		
Draughtsman	128.00		
Carpenter work	41.75		
Two lamp posts	44.00		
Printing notices	32.00		
Rope and oars	37.66		
Saddle and bridle	34.25		
Sounding	3.50		
Pile hammer	16.52		
Miscellaneous	69.42	4,154.59	4,
Amounts carried forward		$210,901.21	$201,

		Cash Payment.	True Cost.
Amounts brought forward		$210,901.21	$201,821.41
UNION PARK.			
D. Cromby, on account improving	$806.60		
Superintendent	249.99		
Labor	161.36		
Plan	100.00		
Tools	8.80		
Advertising	28.13	1,354.88	
Deduct—			
Hay sold	$146.12		1,208.76
LINCOLN PARK.			
S. Nelson, on account improving	$3,704.43		
Engineering	277.05		
Sidewalk, 732 feet	256.20		
Plan	100.00		
Rodman	91.00		
Advertising	69.37		
Labor	28.00		
Tools	20.00	4,546.05	4,546.05
DEARBORN PARK.			
Drain pipe, 100 pieces, 4 inch	$30.00		
Labor	36.00	66.00	66.00
WASHINGTON PARK.			
Sidewalk, curbing, and tree protections,	$880.08		
Trees	183.62		
Nails	44.50		
Lamp	5.75	1,113.95	1,113.95
JEFFERSON PARK.			
Labor	$818.13		
Tools and nails	13.75		
Advertising	24.76	856.64	856.64
Amounts carried forward		$218,838.73	$209,612.81

		Cash Payment.	T
Amounts brought forward		$218,838.73	$209
LAKE PARK.			
Labor		114.50	
INTERSECTIONS OF STREETS.			
Filling intersection Wolcott & Kinzie sts.	$174.00		
Paving " Wolcott street	185.00		
Paving " Michigan street	2,986.72		
Paving " Dearborn street	1,378.34		
Paving " Wells street	4,911.69		
Filling " Wells street	308.75		
Filling " State and S. Water sts.	1,027.12		
Stone for " " " "	142.36		
Rais'g wall " " " "	30.00		
Paving " " " "	1,070.37		
Graveling North Clark street	2,890.94		
Filling Erie street	170.08		
Planking intersection Court place	55.25		
Paving front of North Market	23.75		
Raising catch basins Wells street	147.62		
" " " So. Water street	15.25		
" " " Wabash avenue	148.50		
" " " Michigan street	64.87		
" " " sundry	279.00		
Resetting curb Wabash avenue	66.12		
Labor on Wabash avenue	154.50		
Wheelbarrows	24.00		
Cement	145.81		
Lumber	151.98		
Inspecting	177.00		
Tools	7.95	16,736.97	16,
DOCK LINE SURVEY.			
Engineers	$ 961.58		
Rodmen	2,645.19		
Draughtsmen	427.86		
Drawing paper	74.40		
Sounding river	92.00		
Measures and tools	33.60		
Field books	5.65		
Map of Chicago	3.00	4,243.28	
Amounts carried forward		$239,933.48	$226,

		Cash Payment.	True Cost.
Amounts brought forward		$239,933.48	$226,464.28
Deduct—			
Labor for South Branch Dock Co.	$24.00		4,219.28
STRAIGHTENING NORTH CLARK STREET.			
Damages paid W. Lill and Robt. Edson,		750.00	750.00
WASHINGTON STREET TUNNEL.			
Draughtsman making plans	$142.00		
Advertising	81.50		
Specifications	21.50	245.00	245.00
DREDGING BAR AT MOUTH OF HARBOR.			
Fox & Howard, dredging	$18,839.66		
Interest	639.14	19,478.80	19,478.80
DREDGING GOOSE ISLAND.			
Dredging 13,549 7-9 cubic yards	$7,994.38		
Inspecting	68.00		
Advertising for proposals	24.74	8,087.12	8,087.12
DREDGING SO. BRANCH FROM HALSTED ST. TO CANAL LOCKS.			
Dredging 32,456 4-45 cubic yards	$22,719.25		
Engineering	213.20		
Rodman	112.30		
Advertising	45.36		
Use of tug	25.00	23,115.11	23,115.11
NORTH PIER EXTENSION.			
Fox & Howard and O. B. Greene & Co., balance of contract	$50,283.85		
Do. do. extra labor and materials	4,704.00		
Interest on loans and payments	1,684.51		
Inspecting	45.00		
Keeping light	26.25		
Oil, cans, and lamps	42.44	56,786.05	56,786.05
Amounts carried forward		$348,395.56	$339,145.64

		Cash Payment.	True Cost.
Amounts brought forward		$348,395.56	$339,145.64
STREET LAMPS—WEST DIVISION.			
Lamps and posts	$72.50		
Straps for lamps	20.75	93.25	93.25
PAVING FRONT OF POST OFFICE.			
T. Mackin, paving Dearborn street		814.66	814.66
SIDEWALKS—SOUTH DIVISION.			
Sundry walks constructed		1,240.99	1,240.99
SIDEWALKS—WEST DIVISION.			
Sundry walks constructed		4,410.68	4,410.68
SIDEWALKS—NORTH—DIVISION.			
Sundry walks constructed		596.26	596.26
Total cash expenditures		$355,551.40	$346,301.48
Balance in Treasurer's hands, April 1, 1866,		30,862.97	
		$386,414.37	

CONSTRUCTION OF PRIVATE DRAINS.

APPLICATION FOR DRAINS.

1.—Applications for permits to connect with sewers must be made by the owners of the property to be drained, or by their authorized agents, and must be accompanied by a clear description of the premises and of the drains required, together with the water closets, sinks and other fixtures to be connected with the same, so that said description may be left on file in the office.

2.—At least twenty-four hours' notice must be given at the office of the Board of Public Works, before any street or public way can be opened for the purpose of laying a private drain. Should the drain layer be prevented by bad weather, or by any other good cause, from executing the work at the time notified, he is required to report the fact at this office forthwith, and appoint another time for doing the work.

3.—No drain pipe can be extended from work previously done and accepted, or new connections of any kind be made with such work, unless previous notice, of at least twenty-four hours, is given to the Engineer in charge of Private Drains.

4.—No work of laying drains can be commenced or continued without the permit is on the ground, in the hands of the drain layer, or of one employed by him.

RULES FOR LAYING DRAINS.

1.—In opening any street or other public way, all materials for paving or ballasting must be removed with the least possible injury or loss of the same, and, together with the excavated material from the trenches, must be placed where they will cause the least practicable inconvenience to the public. As little as possible of the trench must be dug till the junction piece into the sewer is found, unless it is first determined to make a new opening into the sewer.

2.—Whenever the sides of the trenches will not stand perpendicular, sheeting and braces must be used to prevent any unnecessary caving.

3 —No pipes or other materials for the drains can be used till they have been examined and approved by the City Engineer, or by one of his Assistants, or by a duly authorized Inspector.

4.—The least inclination that can be allowed for water closet, kitchen, and all other drains of not over six inches diameter, liable to receive solid substances, is one-half an inch in two feet, and for cellar, or other drains to receive water only, one-quarter of an inch in two feet. All drains to be laid at a grade of not over one-half an inch in two feet between the sewers and the sidewalks.

5.—The ends of all pipes not to be immediately connected with water-closets, sinks, down-spouts or catch-basins, are to be securely guarded against the introduction of sand or earth, by brick or cement, or other water-tight and imperishable materials.

6.—All pipes that must be left open to drain cellars, areas, yards or gardens, must be connected with suitable catch-basins of brick, the bottoms of which must not be less than two and a half feet below the bottom of the outlet pipe, the diameter not less than three feet, and the form and construction of which are to be prescribed by the officers named in the third regulation. When packing houses, butcher shops, lard rendering establishments, hotels or eating houses are connected with the sewers, the dimensions of the catch-basins will be required of a large size, according to the circumstances of the case. When the end of the drain pipe is connected with a temporary wooden catch-basin for draining foundations during the erection of buildings, the drain layer will be held responsible that no dirt or sand is carried into the drain or sewer from such temporary catch-basin.

7.—No catch-basin can be built in the public street, but must be placed inside of the line of the lot to be drained, except when the sidewalks are excavated and used as vaults.

8.—No privy vaults can be connected with the sewers except through an intervening catch-basin, and the discharge pipe of the vault must be high enough above its bottom to effectually prevent anything but the liquid contents of the vault from passing into the drain.

9.—The inside of every drain, after it is laid, must be left smooth and perfectly clean throughout its entire length.

10.—In case it shall be necessary to connect a drain pipe with a public sewer, where no junction is left in the public sewer, the new connection with public sewer can only be made either by one of the employees of the Board, or when the officer of the Board, as named in Regulation third, is present to see the whole work done.

11.—Whenever it is necessary to disturb a wooden drain in actual use, it must in no case be obstructed without the special direction of one of the officers named in Regulation third. No pipe drain can be laid above the bottom of a wooden drain, whether in actual use or not, unless the pipe is made to rest either on puddled earth, brick or stone. In no case will it be allowed to let drain pipes rest on wood or other perishable material.

12.—The back-filling over drains, after they are laid, must be puddled, and, together with the replacing of ballast and paving, must be done so as to make them at least as good as they were before they were disturbed, and to the satisfaction of the Board of Public Works, and the drain layer will be held responsible for any subsequent settlement of the ground. All water and gas pipes must be protected from injury or settling, to the satisfaction of the Board and of the Gas Company.

13.—Every pipe layer licensed by the Board must enclose any opening which he may make in the public streets or alleys with sufficient barriers, and must maintain lamps at the same at night, and must take all other necessary precautions to guard the public effectually against all accidents, from the beginning to the end of the work, and can only lay drains on condition that he is to be held liable for all damages that may result from his neglect of any necessary precaution against accidents to persons, horses, vehicles, or property of any kind.

14.—In case a water or gas pipe should come in the way of a drain, the question of passing over or under the water or gas pipe, or of raising or lowering it, must be determined by one of the officers named in Regulation third. In no case can the pipe layer be allowed to decide the question himself.

15.—No exhaust from steam engines can be connected with the private or public drains, and no blow-off from steam boilers can be so connected, without special permission from the Board or its engineers.

16.—Drains laid within the city limits, in and from houses on streets where no public sewers are yet laid, must be done according to the above

regulations, in every particular, except that no permit is required for the same until the connection is made with the sewer. Twenty-four hours' notice must be given of the intention to lay such drains.

17.—Such information as the Board has with regard to the position of junctions, will be furnished to the drain layers, but at their risk as to the accuracy of the same.

18.—When any change of direction is made in the pipe, either in a horizontal or vertical direction, curves must be used. No pipe can be clipped in any case.

SIXTH ANNUAL REPORT

OF THE

Board of Public Works

TO THE

COMMON COUNCIL

OF THE

CITY OF CHICAGO,

FOR THE

Municipal Fiscal Year ending March 31st, 1867.

HISTORICAL
CHICAGO
SOCIETY

CHICAGO:
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1868.

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OF THE

CITY OF CHICAGO,

FOR THE

Municipal Fiscal Year ending March 31st, 1867.

CHICAGO:
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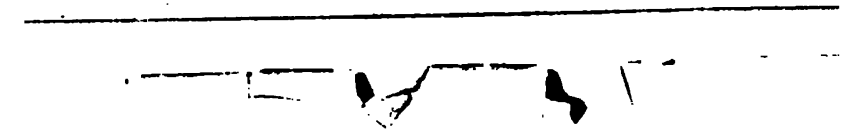
BOARD OF PUBLIC WORKS.

Members of the Board.

A. H. BURLEY, Commissioner and President.
JOHN McARTHUR, Commissioner and Treasurer.
W. H. CARTER, Commissioner.
WILLIAM GOODING, } Members acting only in matters pertaining
ROSWELL B. MASON, } to Cleansing Chicago River.

OFFICERS.

A. W. TINKHAM, Secretary.
E. S. CHESBROUGH, City Engineer.



COMMISSIONERS' REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, April 1, 1868.

To the Mayor and Aldermen of the City of Chicago, in Common Council assembled:

The undersigned submit herewith to your honorable body a report of the proceedings of the Board of Public Works for the fiscal year ending March 31, 1867. The report has been delayed in its preparation, from an intention, which has been abandoned for the present, of embodying in it an illustrated description of the Lake Tunnel and the new Pumping Works.

It should be remarked here, that since the rendering to the Common Council of the latest Annual Report of the Board, viz., that for the year ending March 31, 1866, a change has been made in its organization by an act of the State Legislature, so that the history which follows pertains to the doings of the Board as composed of Messrs. Gindele, Letz, and Rose, neither of whom remains now in the Board. Mr. Gindele, however, was re-elected by the Council, and continued as the President of the Board until Jan. 1, 1868, when the office became vacant by his [illegible]tion.

[illegible]port will speak of the various departments in their usual order.

WATER WORKS.

LAKE TUNNEL.

The noticeable event of the year was the completion of the Lake Tunnel, and the connection of the same through a temporary inlet with the pumping works, so that before the close of the year to which this report pertains, the city was rejoicing in the object of previous years of labor and anxiety—the supply to the city of the waters of the lake in abundance and absolutely pure.

March 17, 1864, the formal breaking of ground at the shore shaft of the tunnel took place. The work thus inaugurated was undertaken with misgivings and doubts on the part of a large share of the citizens, and with the openly expressed disapprobation of some whose intelligence and position entitled their opinions to respect. Though confidence in the success of the work continually grew from the time that it was fairly in progress, the Board, from the time of the adoption of the project, felt that they had assumed a most weighty responsibility, and that to fail, from any cause, would have been disastrous to the city and themselves. The completion of the work to that stage which insured its ultimate success, was, therefore, to them an event of the keenest gratification. Nov. 24, 1866, the two parties which had been slowly nearing each other in their work of excavating for and constructing the tunnel, the one building a tunnel from the lake shore outward, and the other from the crib in the lake constructing a similar tunnel shoreward, were separated only by a thin wall of clay of some two feet in thickness, 8,277 feet from the shore shaft, and 2,290 feet from the crib or lake shaft. Six days later this barrier of earth was removed, and the engineers passed through from one end of the tunnel to the other. When the work of the two parties was brought together, the two portions of the tunnel were found to coincide almost exactly both in line and level, the alignment being found to vary but seven and three fourths inches, while the levels agreed. Thursday, Dec. 6, 1866, the connection closing up the masonry uniting the

two parts of the tunnel was formally made by his Honor, Mayor Rice, and the day was appropriated to the transmission through the tunnel of citizens interested in the inspection of the work. The formal celebration of the completion of the tunnel occurred on the day when its use began as an aqueduct for furnishing the city, March 25, 1867. From that date the supply of water to the city has been drawn through it without interruption. The total cost of the Lake Tunnel at the time of its completion amounted to $457,844.95.

NEW ENGINES.

During the year the circular well of masonry, thirty-seven feet in diameter and twenty-four feet deep, within which are the foundations of the new engine and from which the water is pumped, was securely constructed within a few feet of the foundations of the working engines and the old pump well, without disturbing their stability. Although the new engines were not in operation at the close of the year, according to the anticipation expressed in the previous report, they then lacked little of completion; and that they were not then ready for use, was owing rather to the state of the work on the new engine-house than to an inability to complete the engines.

The average daily consumption of water for the year increased to 8,681,536 gallons, that of the previous year being 6,610,459 gallons; and as is well known, the need of the new engines for the pumping of the increased supply required, was sorely felt in many portions of the city.

NEW ENGINE-HOUSE AND TOWER.

July 30, 1866, the work of constructing the new water works tower was placed under contract. A little later, Sept. 17, 1866, the construction of the new engine-house was also let. Work on both structures commenced immediately after the execution of the contract, and was in full progress at the close of the year.

The main shaft of the tower had then been raised to about the height of sixty feet. The masonry of the north wing of the engine-house, with its boiler-house, was substantially completed,

and the stone chimney had reached a height corresponding nearly with the work on the tower.

WATER PIPES.

11$\frac{1}{16}\frac{1}{16}$ miles or 60,550 feet of pipes were laid during the year (not including that taken up and relaid during the same time), all of which, with a single exception, unimportant in amount, were pipes of either four, six, or eight inches in diameter. These pipes were distributed in the three divisions of the city as follows, viz.:

South Division	19,482	feet.
West "	31,287	"
North "	9,781	"
Total	60,550	"

March 31, 1867, the total amount of pipes laid in the city, of all sizes, was 156 miles and 2,925 feet.

WATER METERS.

The only meters in use in connection with the Chicago Water Works are the Worthington Water Meters. At the close of the year to which this report pertains, there were on hand 184 meters, of various sizes, as below, viz.:

$\frac{5}{8}$ inch	38
1 "	64
2 "	54
3 "	28
Total	184

Of this total number, 179 were in use at the close of the year, all working satisfactorily. The total number of gallons pumped by the engines is reported by the engineer in charge to have been 3,168,760,609 gallons. Of this total quantity, 315,363,000 gallons were measured by the meters, or about one tenth of the whole amount; and a revenue obtained therefrom of $47,695, the average price being about fifteen cents for each thousand gallons.

TAPPING OF WATER PIPES.

An unusually large number of taps was inserted during the year, of various sizes, as follows, viz. :

1 inch	87
¾ "	153
⅝ "	488
½ "	2,274
Total	3,002

EXPENDED DURING THE YEAR IN ADDITIONS TO THE WATER WORKS.

11⅛⅛⅛ miles of distributing water mains laid	$121,589.23
Lake Tunnel	118,316.01
New Well Chamber	16,108.87
Temporary connection with Lake Tunnel	3,418.82
New Engines	71,420.80
New Engine-House	36,690.94
New Tower	37,473.24
New Inlet, including the Gate Chamber	24,936.29
Addition to the lot at the Pumping Works	40,000.00
Total	$469,954.20

WORKING EXPENSES, REPAIRS, AND INTEREST.

Interest, including $3,493.12 transferred from discount account	$120,850.75
Expenses at the Pumping Works	36,209.23
Improvements at the South and West reservoir lots,	595.17
Repairs of Pipes, Hydrants, &c., and miscellaneous operating expenses	33,771.10
Water Meters, current expenses, depreciation, &c.	2,724.51
Salaries of Board and Officers, and all salaries and expenses pertaining to the Water Office and to the assessment and collection of water rents	23,346.78
Total cost for fiscal year of interest and expenses	$217,497.54

The interest from the issues of water loan bonds during the year increased $29,868.24, but it is noticeable that the repairs and operating expenses cost $14,346.71 less during this year than that preceding.

INCOME.

Water rents collected, deducting $75.26 refunded	$301,048.81
Profits of tapping pipes	968.78
Total income for the year	$302,017.59
Excess of income over interest and expenses (a greater excess than has ever before occurred.)	84,520.05
Increase of income of year ending March 31, 1867, over that of year preceding	48,903.10
Increase of interest and expenses for same time	15,521.53

COST OF THE WORKS.

Cost of the Water Works, including all expenditures on new engine, engine-house, and all works in progress, March 31, 1867	$2,373,919.80

HOW THE WORKS HAVE BEEN PAID FOR.

Water Loan Bonds, six per cent., $1,030,000; deducting for discount, $50,375.20	$ 979,624.80
Water Loan Bonds, seven per cent	790,000.00
Temporary loans to be paid during succeeding fiscal year	286,859.81
Balance derived from surplus of water rents	317,435.19
Total	$2,373,919.80

SEWERAGE WORKS.

A quite large amount of sewerage work was done during the year. The new sewers laid in the three divisions are in amount and cost as follows, viz.:

South Division,	16,587	feet,	costing	$ 73,859.93
West "	23,745	"	"	119,334.28
North "	7,795	"	"	32,370.32
Total	48,127	"	or 9$\frac{607}{5280}$ miles, costing	$225,564.53

The whole length of sewers laid at the close of the year amounted to 84$\frac{1313}{5280}$ miles.

The repairs of sewers during the year cost..... $ 7,773.65
The cleansing of the sewers and catch-basins during the same period cost..... 28,445.16

a very large increase over the cost of previous years.

As remarked by the assistant engineer having special care of this department, the streets in which the sewers are laid are generally yet unpaved, and it is found that the cleansing of the sewers in such streets costs three times as much as on streets properly improved.

PRIVATE DRAINS.

A very great number of private drains was laid during the year, all of which are put down under the supervision and subject to the rules of the Board. The number connected with the public street sewers during the year amounts to 3,732, or about 42 per cent. of the whole number laid in all previous years.

EXPENSES, REPAIRS, AND INTEREST.

Interest on Sewerage Loan Bonds.....	$ 88,487.36
Sinking Fund, amount set aside of tax of 1865....	21,033.85
Salaries, office and miscellaneous expenses.....	14,347.34
Repairs and cleansing of sewers, as above.....	36,218.81
Total cost for year.....	$160,087.36

SEWERAGE LOAN BONDS.

Six per cent. bonds outstanding March 31, 1867..	$ 87,000.00
Seven " " " " " ..	1,274,000.00
Total outstanding bonds at close of year.....	$1,361,000.00

SEWERAGE SINKING FUND.

The condition of this fund at the close of the year was as follows, viz.:

Balance in hands of City Treasurer, March 31, 1867...	$ 902.47
Due from the sewerage tax of 1866.....	23,301.90
Mortgage due and unpaid.....	5,867.10
Amount of Sewerage Sinking Fund not yet invested in sewerage bonds.....	$30,071.47

During the year $21,000 of sewerage bonds were purchased and canceled, making altogether of sewerage bonds which had been purchased and canceled at the close of the year, $139,000.

DEEPENING OF THE ILLINOIS AND MICHIGAN CANAL.

The progress made on this work during the year was not satisfactory to the Board, nor such as to beget confidence in the completion of the work within any reasonable time.

As was noticed in the preceding report, the total earth-work of the canal was let to Messrs. Fox, Howard & Walker, whose contract was for the construction of sections 1 to 44 inclusive, at the prices, thirty-three (33) cents and two dollars ($2.00) per cubic yard for the earth excavation and rock excavation, respectively. The balance of the work, the rock sections, or sections 45 to 64 inclusive, was let to Messrs. Sanger, Steele & Co. at the price, one dollar sixty-four and three fourths cents ($1.64¾) per cubic yard of rock excavation.

These prices do not appear to have been remunerative to the contractors, and the progress made was so unsatisfactory that both contracts were declared annulled, and forfeited during the year. At the close of the year no work was in progress, except that the Board, having advertised anew, inviting proposals for the work, to be submitted May 1, 1867, had authorized Messrs. Fox, Howard & Walker to keep their dredges at work in the canal, payment to be made to them at such price as the work should be re-let for.

It was found necessary to keep the Bridgeport pumps in operation for freeing the river from offensiveness, but for a limited period. The pumping was ordered to be commenced June 21, and was suspended Sept. 5. The amount paid for this pumping was $3,398.80.

Among the items of expenditure during the year, is one which is worthy of note, as showing the disposition of the Board to afford to the contractors every facility for prosecuting the deepening of the canal, even at considerable expense to the city. The expenditure is for lost tolls, paid to the Trustees of the canal for closing the canal Nov. 1, 1866, instead of Nov. 15,

$8,642.99, the Board regarding it for the interest of the city to secure thus for Messrs. Sanger, Steele & Co. the advantages to be gained by their commencing their winter's work a half month in advance of the time when it was stipulated that navigation should be suspended in the canal.

CHICAGO HARBOR.

No expenditures were made during the year for maintaining the entrance to the harbor. The Board caused the necessary soundings and surveys to be made in order to keep watch of the changes always going on at the mouth of the harbor, but the work of extending the pier and dredging the channel, if necessary, was in the hands of the United States Engineer.

Late in the year the Board contracted for the dredging of a channel in the North Branch, 50 feet wide and 11½ feet of minimum depth at the ordinary level of the lake, extending from Indiana street to within 200 feet of Wabansia avenue.

The dock line survey was continued at a very large cost, and nearly completed.

WASHINGTON STREET TUNNEL.

August 23, 1866, the plans of the tunnel having been previously decided upon, proposals were received for the construction of a tunnel under Chicago river, at Washington street, connecting the South and West Divisions of the city. Of the many proposals presented, that of Stewart, Ludlam & Co. was accepted, and a contract executed with them for the construction of the tunnel complete for $271,646.04.

The progress made by the contractors at the close of the year was more limited than had been anticipated, and was confined to the construction in part of the coffer dam in the eastern side of the river, and to the execution of a portion of the work of excavating the east and west approaches.

STREET WORK.

A large amount of work was accomplished during the year n the improvement of the streets and alleys of the city. As vill be seen by an examination of the list which follows this tatement, the improvements are important in their extent, and nclude some of the most important business streets and thor- ughfares of the city.

Allusion was made in the preceding annual report to an mportant decision rendered by the Superior Court of this city n relation to the assessment of property for street improve- nents; and particularly that Railway Companies, occupying with their tracks the street to be improved, were subject to assessment in common with other parties benefited. This decision was affirmed by the Supreme Court at its April term, held at Ottawa in 1866, and is, in substance, to the effect that special assessments, levied for various public improvements, must be levied upon all the property benefited by the improve- ment, and in proportion to the benefit to be derived from it. The recent amendments to the charter of the city relating to special assessments, were framed with reference to this decision.

STATEMENT SHOWING THE STREET WORK DONE AND ORDERED DONE FROM APRIL 1, 1866, TO APRIL 1, 1867.

The following streets have been ordered curbed with curb walls or curb-stone, filled, graded, and paved with wooden block pavement:

Wabash Avenue, from Randolph Street to Twenty-second Street.....*Completed from Adams to Twenty-second Streets.*

West Randolph Street, from Halsted Street to West Water Street.....*Completed.*

West Madison Street, from Halsted Street to the Bridge.....*Completed.*

Calhoun Place, Block 56, Original Town.....*Completed.*

La Salle Street, from Washington Street to Madison Street..... *Completed.*
Van Buren Street, from State Street to Chicago River..... *Completed.*
Wells Street, from Van Buren Street to Taylor Street. *Completed.*
Wells Street, from South Water Street to Lake Street..... *Completed.*
Van Buren Street, from State Street to Michigan Avenue..... *Completed.*
Washington Street, from State Street to Michigan Avenue..... *Completed.*
Sherman Street, from Van Buren Street to Harrison Street..... *Completed.*
Griswold Street, from Van Buren Street to Polk Street..... *Completed.*
North Wells Street, from the River to Kinzie Street.

The following streets have been ordered macadamized:

Canal Street, from Adams Street to Twelfth Street.. *Completed.*
Halsted Street, from Archer Road to Thirty-first Street.....
Halsted Street, from Thirty-first Street to Egan Avenue.....

The following streets and alleys have been ordered filled, graded, and planked:

Alley in south part of Block 43, School Section Addition..... *Completed.*
Alley in south ½ Block 7, Fort Dearborn Addition.. *Completed.*
Alley in Block 3, Wolcott's Addition..... *Completed.*
Couch Place, between Dearborn Street and Clark Street..... *Completed.*
Alley, Block 12, Butler, Wright & Webster's Addition..... *Completed.*
Lumber Street, from Lot 1, Block 4, Sec. 21, to Chicago, Pittsburgh and Fort Wayne Railroad..... *Completed.*
Alley, Block 14, Wolcott's Addition..... *Completed.*
Alley, Block 11, Wolcott's Addition..... *Completed.*
Alley, Block 30, Wolcott's Addition..... *Completed.*

Alley, Block 35, Wolcott's Addition.....*Completed.*
Alley, Block 70, Russell, Mather & Robert's Addition. *Completed.*
Alley, Blocks 129 and 130, School Section Addition. *Completed.*
Alley, Block 11, Frac. Sec. 15, Addition.....*Completed.*
Alley, Block 27, Sec. 17, T. 39, R. 14.....*Completed.*
Alley, Block 62, Sec. 7, T. 39, R. 14.....*Completed.*
Alley, Block 14, W. ½ of W. ½, N. E. ¼, Sec. 17....*Completed.*
Haddock Place, Block 20, Original Town.....*Completed.*
Alley, Blocks 21 and 30, S. E. ¼, Sec. 17, T. 39, R. 14. *Completed.*
Alley, Block 9, Wolcott's, and 14, Kinzie's Addition. *Completed.*
Court Place, between La Salle Street and Wells Street.....*Completed.*
Alley, Block 33, Sec. 21, T. 39, R. 14.....*Completed.*
Alley, N. ½ Block 53, Sec. 7, T. 39, R. 14.....*Completed.*
Alley in S. ½ Block 43, Carpenter's Addition.....
Alley in Block 26, Johnson, Robert & Storr's Addition.....*Completed.*
Alley, between Twelfth and Fourteenth Streets, and between State Street and Wabash Avenue.....*Completed.*
Alley in N. ½ Block 52, Sec. 7, T. 39, R. 14.....*Completed.*
Alley in Block 2, Wolcott's Addition.....*Completed.*
Alley in W. part of Block 15, Johnston, Robert & Storr's Addition.....
Alley in Block 4, Kinzie's Addition.....
Alley, Block 1, Wolcott's, and 3, Kinzie's Addition.
Alley, Block 19, Frac. Sec. 15, Addition.....
Alley, Block 8, Sampson & Green's Addition.....
Alley, Block 5, School Section Addition.....
Alley, Block 12, W. ½ and W. ½ N. E. ¼, Sec. 17, T. 39, R. 14.....
Alley, between Fourteenth and Sixteenth Streets, and State Street and Wabash Avenue.....
Alley in S. ½ Block 63, N. W. ¼, Sec. 21, T. 39, R. 14.
Alley in Block 6, Wolcott's Addition.....

The following miscellaneous improvements have been ordered:

Graveling Sixteenth Street, from State Street to Prairie Avenue.....*Completed.*

Graveling Prairie Avenue, from Sixteenth Street to Twenty-second Street..... *Completed.*
Cindering Archer Road, from Reuben Street to Western Avenue..... *Completed.*
Cindering Noble Street, North Avenue, and Elston Road.....
Graveling Michigan Avenue, from Park Place to Twelfth Street.....
Graveling Rush Street, from Kinzie Street to Chicago Avenue.....
Part of Haddock Place, Block 8, Fort Dearborn Addition, to be paved with boulder stone..... *Completed.*
Curbing with curb wall Monroe Street, from Clark Street to Market Street..... *Completed.*

LAMP POSTS.

ORDERED BY COMMON COUNCIL DURING YEAR FROM APRIL 1st, 1866, TO APRIL 1st, 1867.

The following list shows the orders given by the Common Council during the past year, for the erection of lamp posts in the different divisions of the city, and also the progress that has been made in carrying out these orders:

SOUTH DIVISION.

WHERE ERECTED.	No. Posts.	REMARKS.
Fourth av. bet. Taylor and 12th sts.	2	Posts erected.
Peck Court bet. Wabash and Michigan avs.	2	
Michigan av. bet 26th and 29th sts.	13	
Calumet av. bet. 26th and 29th sts.	9	Posts erected.
25th st. bet. Indiana and Prairie avs.	4	
16th st. bet. State st. and Indiana av.	7	Posts erected.
N. E. corner 23d st. and Prairie av.	1	Post erected.
14th st. bet. State st. and Indiana av.	8	Posts erected.
Van Buren st. bet. S. Wells and Griswold sts.	4	Posts erected.
Van Buren st. bet. S. Wells and Market sts.	8	Posts erected.
Prairie av. bet. 25th and 29th sts.	17	
Harrison st. bet. Wells and Clark sts.	6	Posts erected.
29th st. bet. Indiana and Calumet avs.	8	
Indiana av. bet 14th and 16th sts.	12	Posts erected.
Indiana av. bet. 29th st. and about 600 feet N.	8	Posts erected.
Prairie av. bet. 22d st. and 2d post S. of 29th st.	11	Posts erected.
22d st. bet. Wabash and Indiana avs.	4	

WEST DIVISION.

WHERE ERECTED.	No. Posts.	REMARKS.
Fulton st. bet. Ada and Sheldon sts.	2	Posts erected.
Adams st. bet. Halsted and Green sts.	1	Post erected.
Hubbard st. bet. Page and Wood sts.	2	Posts erected.
Rucker st. bet. Blue Island av. and Adam st.	47	Posts erected.
Madison st. bet. Oakly and Roby sts.	20	Posts erected.
Erie st. bet. Union and Halsted sts.	2	
Chicago av. bet. Halsted and Green sts.	1	
Taylor st. bet. Rucker and Throop sts.	5	Posts erected.
Green st. bet. Madison and Washington sts.	2	Posts erected.
Adams st. bet. Peoria and Sangamon sts.	2	Posts erected.
Peoria st. about 140 feet N. of Madison st.	1	Post erected.
W. 12th st. bet. Halsted and Brown sts.	9	Posts erected.
Jefferson st. bet. Judd and Mitchell sts.	13	Posts erected.
Warren st. bet Roby and Hoyne sts.	7	Posts erected.
Throop st. bet. Madison and Monroe sts.	3	Posts erected.

NORTH DIVISION.

WHERE ERECTED.	No. Posts.	REMARKS.
Michigan st. bet. Pine and St. Clair sts.	3	
Water st. bet. Rush and St. Clair sts.	4	Posts erected.
Pine st. corner of alley N. of Superior st.	1	Post erected.
Chicago av. bet. N. Wells and La Salle sts.	2	Posts erected.
N. La Salle st. bet. Division and Schiller sts.	12	
Division st. bet. Sedgwick and N. Clark sts.	16	Posts erected.

SIDEWALKS.

The following report by the Superintendent of Sidewalks exhibits all sidewalks laid and relaid during the year:

"CHICAGO, Feb. 4, 1868.

A. W. TINKHAM, ESQ.,

Secretary of Board of Public Works.

DEAR SIR: The undersigned repectfully presents his report relating to the construction and reconstruction of sidewalks in this city, from April 1, 1866, to April 1, 1867, under the following ordinances:

NORTH DIVISION.

S. side.	Menomonee st., from Mohawk st. to Sedgwick st.	All laid.
B. sides.	Sedgwick st., from Erie st. to Huron st.	All laid.
B. sides.	Howe st., from Willow st. to Center st.	All laid.
B. sides.	Gardner st., from Halsted st. to Vine st.	All laid ex. 1 lot.
S. side.	Blackhawk st., from Halsted st. to Clybourne av.	All laid.
W. side.	Dayton st., from Willow st. to Center st.	All laid.
E. side.	Green Bay road, from Chicago av. to Pearson st.	Not laid.
S. side.	Fullerton av., from Halsted st. to Lake Michigan.	All laid.
S. side.	Fullerton av., from Halsted st. to Chicago river.	All laid.
E. side.	Orchard st., from Center st. to Fullerton av.	All laid.
B. sides.	Vine st., from North av. to Willow st.	Partly laid.
E. side.	Hurlburt st., from Center st. to Fullerton av.	All laid.
B. sides.	Larrabee st., from Asylum place to Fullerton av.	All laid.
B. sides.	Hammond st., fr. Menomonee st. to Wisconsin st.	All laid.
E. side.	Burling st., from Willow st. to Center st.	All laid.
S. side.	Erie st., from Market st. to Erie st. bridge.	Not laid.
W. side.	Pine st., from Pearson st. to Lake Michigan.	All laid.
N. side.	Oakwood st., from Green Bay to 550 feet east.	All laid.
S. side.	Huron st., from Market st. to east side lot 9.	All laid.
S. side.	Wendell st., from Wells st. to Sedgwick st.	All laid.
W. side.	Franklin st., from Menomonee st. to Wisconsin st.	All laid.
B. sides.	North av., from Clark st. to Wells st.	¾ laid.
N. side.	Willow st., from Halsted to Sheffield av.	All laid.
S. side.	Wisconsin st., from Clark street to Larrabee st.	All laid.
E. side.	Sedgwick st., from Oak st. to Division st.	All laid.
N. side.	Menomonee st., from Sedgwick st. to Larrabee st.	All laid.
N. side.	Oak st., from Clark st. to State st.	All laid.

SOUTH DIVISION.

W. side.	Vincennes road, from Douglas place to Egan av.	All laid.
E. side.	Hanover st., from McGregor to Twenty-sixth sts.	All laid ex. 150 ft.
S. side.	Twenty-ninth st, from Michigan av. to Calumet av.	All laid.
W. side.	Calumet av., from Twenty-sixth to Thirty-first sts.	Partly laid.

SOUTH DIVISION.—CONTINUED.

N. side.	Twenty-fourth st., from Calumet to Kankakee avs.	All laid.
N. side.	Oakwood av., from I. C. R. R. to city limits.	All laid.
E. side.	Kankakee av., from 29th st. to 31st st.	Partly laid.
S. side.	24th st., from Indiana av. to Cottage Grove av.	All laid.
S. side.	22d st., from Calumet av. to Kankakee av.	All laid.
W. side.	Quarles st., from Douglas place to Wahpanseh av.	Partly laid.
W. side.	Farrell st., from Archer av. to railroad crossing.	All laid.
S. side.	Twenty-third st., from Wabash to Michigan avs.	All laid.
W. side.	Wentworth av., from 22d st. to 24th st.	All laid ex. 1 lot.
S. side.	Twenty-third st., from State st. to Hanover st.	Partly laid.
E. side.	Buddan st., from Archer av. to Bushnell st.	All laid.
S. side.	Lyon av., from Indiana av. to I. C. R. R.	All laid.
S. side.	Wahpansch av., from Ellis av. to Vincennes road.	All laid.
B. sides.	Wabash av., from 26th st. to 31st st.	All laid.
E. side.	Halsted st., from Archer av. to Egan av.	All laid.
N. side.	Twentieth street, from Clark st. to Arnold st.	All laid.
E. side.	Michigan av., from 28th st. to 31st st.	All laid.
E. side.	Wabash av., from 31st st. to 32d st.	All laid.
S. side.	Archer av., from Main st. to Pitney av.	All laid.
W. side.	Michigan av., from 31st st. to 32d st.	Partly laid.
W. side.	Wallace st., from McGregor st. to 28th st.	All laid.
S. side.	McGregor st., from Sanger st. to Wallace st.	All laid ex. 50 ft.
E. side.	Wallace st., from McGregor st. to Archer av.	All laid.
B. sides.	State st., from 25th st. to 28th st.	All laid.
E. side.	Indiana av., from 31st st. to 32d st.	All laid ex. 75 ft.
N. side.	Thirty-first st., from State st. to Michigan av.	All laid ex. 50 ft.
N. side.	Twentieth st., from Arnold st. to Grove st.	Partly laid.
W. side.	Ullman st., from Thirty-first st. to Douglas place.	Laid to the creek.
N. side.	Twenty-ninth st., from State st. to Indiana av.	All laid.
N. side.	Twenty-sixth st., from Sanger st. to Halsted st.	All laid.
S. side.	Twenty-ninth st., from Calumet to Kankakee avs.	All laid.
E. side.	Wentworth av., from 22d st. to 31st st.	All laid ex. 1 lot.
E. side.	Indiana av., from Thirty-first st. to Douglas place.	*All laid.
S. side.	Fourteenth st., from Wabash av. to Michigan av.	All laid.
B. sides.	Third av., from Twelfth st. to Fourteenth st.	All laid.

WEST DIVISION.

FIRST DISTRICT.

S. side.	Chicago av., from Noble st. to Reuben st.	All laid.
E. side.	Rucker st., from Chicago av. to Milwaukee av.	All laid.
N. side.	Milwaukee av., from Wood st. to Western av.	All laid.
W. side.	Paulina st., from Chicago av. to Clarinda st.	All laid.
S. side.	Fourth st., from Halsted st. to Green st.	All laid.
N. side.	Second st., from Milwaukee av. to Wood st.	All laid.
S. side.	Fig st., from Milwaukee av. to western terminus.	All laid.
N. side.	West Erie st., from Noble st. to Paulina st.	All laid.
W. side.	Elston road, from N. W. R. R. to Wade st.	All laid.
N. side.	Clarinda st., from Reuben st. to Paulina st.	All laid.
S. side.	First st., from Reuben st. to Paulina st.	All laid.
S. side.	West Indiana st., from Reuben st. to Paulina st.	All laid.
N. side.	West Indiana st., from Wood st. to Lincoln st.	All laid.
S. side.	West Indiana st., from Elizabeth st. to Reuben st.	All laid ex. 1 lot.
E. side.	Peoria st., from Hubbard st. to Milwaukee av.	All laid.
N. side.	Carroll st., from Noble st. to Reuben st.	All laid ex. 1 lot.
S. side.	Cornelia st., from Noble st. to Reuben st.	All laid.

WEST DIVISION.—CONTINUED.

W. side.	Noble st., from Cornell st. to Emma st.	All laid ex. 1 lot.
W. side.	Elston road, from Nave st. to Wabansia av.	All laid.
N. side.	North av., from Milwaukee av. to Elston road.	Partly laid.
S. side.	Chicago av., from Rucker st. to Noble st.	All laid.
W side.	Reuben st, from Milwaukee av. to Clybourne pl'ce.	All laid.
S. side.	Hubbard st., from Elizabeth st. to Western av.	Partly laid.
N. side.	Hubbard st., from Ashley st. to Western av.	All laid.
S. side.	North av., from Noble st. to Elston road.	All laid.
E. side.	Elston r'd, from Wabansia av. to Clybourne place.	All laid.
E. side.	Noble st., from Division st. to North av.	All laid.
E. side.	Ridgeville road, from Elk st. to Blackhawk st.	All laid ex. 3 lots.
W. side.	Rumsey st., from Clarinda st. to Augusta st.	All laid.
W side.	Rucker st., from Milwaukee av. to N. W. R. R.	All laid.
E. side.	Halsted st., from West Erie st. to Chicago av.	All laid.
S. side.	Pratt st., from Halsted st. to Sangamon st.	All laid ex. 1 lot.
E. side.	May st., from West Indiana st. to Second st.	All laid.
W. side.	May st., from Second st. to Chicago av.	All laid.
N. side.	Wabansia av., from Elston road to Milwaukee av.	Partly laid.
N. side.	Bloomingdale rd., from Elston road to Reuben st.	All laid.
W. side.	Coventry st., from North av. to Coventry place.	All laid.
NE side.	Milwaukee av., from Division st. to Reuben st.	All laid.
E. side.	Paulina st., from West Indiana st. to First st.	All laid ex. 1 lot.
	SECOND DISTRICT.	
E. side.	Ann st., from Randolph st. to Lake st.	All laid.
S. side.	Park av., from Leavitt st. to Oakley st.	All laid.
W. side.	Hoyne st., from Carroll st. to Walnut st.	All laid.
S. side.	Jackson st., from Reuben st. to Marshfield st.	All laid.
S. side.	Warren st., from Paulina st. to Page st.	All laid.
W. side.	Paulina st., from Madison st. to Warren st.	All laid.
S. side.	Walnut st., from Robey st. to Hoyne st.	All laid.
N. side.	Warren st., from Hoyne st. to Leavitt st.	All laid.
W. side.	Robey st., from Lake st. to Walnut st.	Not laid.
W. side.	Paulina st., from Madison st. to Adams st.	All laid.
W. side.	Paulina st., from Adams st. to Tyler st.	Not laid.
W. side.	Green st., from Jackson st. to Van Buren st.	All laid.
E. side.	Peoria st, from Jackson st. to Van Buren st.	All laid.
N. side.	Carroll st., from Halsted st. to Peoria st.	All laid.
E. side.	Honore st., from Madison st. to Adams st.	All laid.
N. side.	Van Buren st., from Sangamon to Aberdeen sts.	All laid.
W. side.	Elizabeth st., from Madison st. to Washington st.	Not laid.
S. side.	Randolph st., from Elizabeth st. to Sheldon st.	Not laid.
B. sides.	Ada st., from Madison st. to Randolph st.	Partly laid.
N. side.	Washington st., from Leavitt st. to Western av.	All laid.
N. side.	Carroll st., from Robey st. to Leavitt st.	Partly laid.
E. side.	Page st., from Madison st. to Washington st.	All laid.
W. side.	Oakley st., from Lake st. to Fulton st.	All laid.
S. side.	Fulton st., from Reuben st to Paulina st.	All laid.
S. side.	Fulton st., from Oakley st. to Western av.	All laid.
W. side.	Loomis st., from Monroe st. to Jackson st.	All laid.
E. side.	Throop st., from Jackson st. to Van Buren st.	Partly laid.
E. side.	Hoyne st., from Washington st. to Warren st.	All laid.
W. side.	Hoyne st., from Madison st. to Washington st.	Partly laid.
S. side.	Fulton st., from Robey st. to Hoyne st.	Partly laid.
W. side.	Blue Island av., from Harbine st. to R. R. crossing.	All laid.
N. side.	Twenty-second st., from Halsted to Jefferson sts.	All laid.
S. side.	Tyler st., from Aberdeen st. to Rucker st.	All laid.
S. side.	Taylor st., from Rucker st. to Throop st.	All laid.

WEST DIVISION.—CONTINUED.

E. side.	Halsted st., from Twenty-second st. to Chicago av.	All laid.
B. sides.	Miller st., from Harrison st. to Polk st.	All laid.
N. side.	Twelfth st., from Rucker st. to Loomis st.	All laid.
E. side.	Canal st., from Lumber st. to Eighteenth st.	All laid.
B. sides.	Johnson st., from Twelfth st. to Taylor st.	All laid ex. 1 lot.
N. side.	Twenty-second st., from Brown st. to Rucker st.	All laid.
S. side.	Canalport av., from Halsted st. to Brown st.	All laid.
S side.	Liberty st., from Union st. to Halsted st.	All laid.
E. side.	May st., from Harrison st. to Polk st.	All laid.
W. side.	Sholto st., from Taylor st. to Damon st.	All laid.
W. side.	Nutt st., from Sixteenth st. to terminus.	Partly laid.
S. side.	Better st., from Sholto st. to May st.	All laid.
W. side.	Union st., from Canalport av. to 22d st.	All laid.
W. side.	Morgan st., from Van Buren st. to Harrison st.	All laid.
N. side.	Mitchell st, from Throop st. to Loomis st.	All laid.
N. side.	Henry st, from Laflin st. to Blue Island av.	Partly laid.
S. side.	Tyler st., from Halsted st. to Aberdeen st.	All laid.
W. side.	Throop st., from Taylor st. to Twelfth st.	All laid.
B. sides.	Kansas st., from Throop st. to Loomis st.	All laid ex. 1 lot.
N. side.	Catherine st., from Morgan st. to Rucker st.	All laid.
B. sides.	Eighteenth st., from Lumber st. to River st.	All laid.
E. side.	Loomis st., from Sampson st. to Coolidge st.	All laid.
B. sides.	English st., from Halsted st. to Union st.	All laid.
N. side.	Harrison st., from Morgan st. to Aberdeen st.	All laid.
B. sides.	Nebraska st., from Throop st. to Loomis st.	All laid ex. 1 lot.
E. side.	Brown st., from Twelfth st. to Maxwell st.	All laid.
W. side.	Lytle st., from Taylor st. to Twelfth st.	All laid.
E. side.	Morgan st., from Twelfth st. to R. R. crossing.	All laid ex. 2 lots.
N. side.	Coolidge st., from Loomis st. to Reuben st.	All laid.
N. side.	Kansas st., from Loomis st. to Laflin st.	All laid.
E. side.	Newberry st, from Twelfth st. to Wright st.	Partly laid.
W. side.	Throop st., from Hastings st. to Blue Island av.	Partly laid.
B. sides.	Waller st., from Twelfth st. to Maxwell st.	Partly laid.
W. side.	Loomis st., from Taylor st. to Twelfth st.	All laid.
S. side.	Taylor st., from Loomis st. to Laflin st.	All laid.
E. side.	Center av., from Blue Island av. to Sixteenth st.	Partly laid.
S side.	English st., from Halsted st. to John st.	All laid.
N. side.	Rebecca st., from Laflin st. to Blue Island av.	Partly laid.
W. side.	Morgan st., from Harrison st. to Polk st.	All laid.
W. side.	Brown st., from Taylor st. to Maxwell st.	Partly laid.
B. sides.	Seward st., from Sixteenth st. to Eighteenth st.	All laid.
W. side.	Loomis st., from Mitchell st. to Catherine st.	All laid.

The following statement shows the total amounts of sidewalks constructed and re-constructed in the three divisions of the city, during the year, viz:

SOUTH DIVISION.

Number of feet of sidewalks constructed on ordinances passed by Council	25,300
Number of feet of sidewalks reconstructed	27,000
Total	52.300

WEST DIVISION.

Number of feet of sidewalks constructed on ordinances passed by Council	93,500
Number of feet of sidewalks reconstructed	86,600
Total	180,100

NORTH DIVISION.

Number of feet of sidewalks constructed on ordinances by Council	49,055
Number of feet of sidewalks reconstructed	34,950
Total	84,005
Total number of feet constructed	167,855
" " " reconstructed	148,550
Total amount	316,405

feet, equal to 59⅞ miles.

The above statements are obtained from documents and records made and filed in the office of this department, by my predecessor.

J. L. HANCHETTE,
Supt. of Sidewalks."

BRIDGES.

Constant expenditure of considerable amount was required to maintain the large number of bridges owned by the city in good repair.

In the preceding report, the new bridge at Clark street, in progress at the opening of the year, was described. No other new bridge was put up during the year, excepting the pivot bridge crossing the North Branch at Halsted street, paid for in part by the city, and in part by private subscription. Proposals were, however, received, and contracts executed for construction of new bridges at Lake street and Van Buren street. These bridges resemble the Clark street bridge designed by Supt. Thompson. Work on both was in progress at the close of the year.

PUBLIC BUILDINGS.

The Board made the usual repairs on the various buildings in their charge, but did nothing in the way of erecting new buildings, excepting to contract for various school buildings for the Board of Education, all of which are sufficiently described in their report.

In this connection it is of interest to remark that the Board were compelled during the year, for the want of suitable accommodation in the Court House, to procure offices elsewhere, and under authority of your honorable body rented the building, occupied by them since Jan. 15, 1867, Nos. 15 and 17 Wells street.

PARKS.

Improvements of a noteworthy character were in progress during the year at several of the small parks of the city. The work done was necessarily, to a considerable extent, one of preparation, such as grading, the improvement of the soil, and similar work, the good effects of which will be most readily seen hereafter.

The work at Lincoln Park comprised the excavation of the main portions of the artificial lakes and the sodding of the lake banks, the trenching of the low grounds, and the embankment of the artificial elevations. The drives and walks were laid out, and the bed of clay and gravel formed for the main drive leading through the park from its entrance to the lake shore. A small portion only of the drives was made, but large quantities of clay and gravel were accumulated for future uses.

At Union Park, the entire area was subsoiled to the depth of eighteen inches, and four thousand loads of manure were spaded down. The drives and walks were excavated, and the surface of the park graded.

We submit detailed reports of the Water and Sewerage departments by the City Engineer, report of the Superintendent of Streets, &c., as to matters under his supervision, and financial statement as to all the various funds expended under the direction of the Board.

Respectfully submitted.

A. H. BURLEY,
J. McARTHUR,
W. H. CARTER,
} *Board of Public Works.*

REPORT OF THE CITY ENGINEER.

CHICAGO, April 1, 1867.

To the Board of Public Works:

GENTLEMEN: The City Engineer herewith respectfully presents his Sixth Annual Report, following the usual order:

WATER WORKS.

The most important portion of this department is the

PUMPING WORKS,

the performances of which during the year ending this date, present condition, improvements during the year, and future prospects, will be found fully described in the following

REPORT OF ENGINEER OF THE PUMPING WORKS.

PUMPING DEPARTMENT WATER WORKS,
CHICAGO, April 1, 1867.

E. S. CHESBROUGH, ESQ.,
City Engineer.

SIR: I respectfully submit the usual annual report of the operations of this department for the year ending March 31, 1867, it being the thirteenth which I have had the honor of presenting:

During the year the quantity pumped exceeds that pumped last year nearly 391,000,000 gallons, being the largest annual increase (except 1862) since the works were started.

The total quantity pumped during the past year is	3,168,760,609 gals.
Of the whole quantity the large engine pumped	2,288,671,920 gals.
Small engine	880,088,689 "
Total	3,168,760,609 gals.
Being a daily average of	8,681,536 "

It is hardly necessary to say that to supply this quantity of water requires the machinery to be kept in operation most of the time, day and night. The large engine has been in use 250 days, at an average of 18$\frac{11}{12}$ hours per day. The small engine has been in operation 115 days, an average of 19$\frac{11}{12}$ hours per day; the total running time being 6,947$\frac{11}{12}$ hours, making an average of 19$\frac{1}{12}$ hours each day throughout the year.

The total amount of coal received during the past year was 3,728$\frac{1717}{2000}$ tons.
Amount on hand April 1, 1866 1,169$\frac{1717}{2000}$ "
Of this amount there has been used
for pumping 3,761$\frac{110}{1000}$ tons.
For keeping steam when at rest ... 99$\frac{400}{1000}$ "
Pipe laying, tunnel, stoves, etc., etc., 222$\frac{1110}{1000}$ "
On hand April 1, 1867 815$\frac{1332}{2000}$ "

Total 4,898$\frac{1332}{2000}$ tons.

The expenses properly due for pumping during the year were as follows:

Salaries of engineers, firemen, and others	$10,164.00
3,761$\frac{110}{1000}$ tons coal, at an average of $8.51 per ton ...	32,006.11
432$\frac{1}{2}$ gallons oil	686.04
1,200 pounds tallow	152.13
1,100 " waste	225.98
Packing	74.68
Small stores	155.35
Gas for lighting works	183.33
Repairs to engines, boilers, &c	804.52
Total	$44,452.14
Cost of delivering water per million gallons	$14.08

The following record will show the aggregate operations of engines and boilers each month during the year:

MONTHS.	Average Gallons Water pumped per Day.	Total Gallons Water pumped per Month.	Average lbs of Coal consumed per Day.	Total lbs of Coal consumed per Month.
April,	8,673,597	260,207,901	19,866	595,970
May,	8,967,946	278,006,304	20,581	638,000
June,	9,047,183	271,415,472	21,275	638,250
July,	10,022,165	310,687,104	22,955	711,600
August,	9,670,969	299,800,032	23,248	720,670
September,	8,739,893	262,016,784	22,285	668,550
October,	8,545,833	264,920,802	20,940	649,120
November,	7,490,884	224,726,521	18,020	540,600
December,	6,818,271	211,366,383	16,623	515,300
January,	8,368 070	259,410,174	22,293	689,200
February,	9,184,518	257,166,480	25,443	706,800
March,	8,678,602	269,036,652	21,125	654,850

TABLE SHOWING THE QUANTITY OF WATER PUMPED EACH MONTH,

From January 1st, 1858, to April 1st, 1867.

MONTHS.	1858.	1859.	1860.	1861.	1862.	1863.
January,..	81,538,179	106,905,665	132,284,454	137,651,918	151,971,047	169,900,255
February,..	69,426,515	106,401,412	130,800,720	142,071,067	168,931,783	158,108,450
March,..	82,677,463	102,415,963	150,331,690	135,576,447	192,937,949	159,980,404
April,..	83,600,783	89,904,235	139,930,546	128,371,178	1[illegible]0,081,570	
May,..	82,279,920	116,067,263	141,171,078	150,489,168	191,483,082	
June,..	90,211,505	113,098,416	148,197,034	155,996,352	199,113,518	Hereafter the year commences on the first day of April.
July,..	101,670,736	133,800,396	166,394,640	147,182,798	209,215,872	
August,..	107,176,652	123,966,556	152,427,690	168,603,494	195,588,295	
September,..	108,534,540	131,735,847	133,272,902	152,710,186	186,902,888	
October,..	101,046,605	141,537,040	148,710 195	149,382,166	190,045,045	
November,..	86,385 840	127,342,018	150,493,248	153,879,648	187,002,730	
December,..	98,316,722	122,653,139	130,773,075	145,261,272	175,006,027	
TOTAL,..	1,091,865,459	1,415,147,910	1,716,786,552	1,767,154,689	2,217,279,739	487,989,109

MONTHS.	1863-4.	1864-5.	1865-6.	1866-7.
April,..	173,519,952	178,013,170	189,131,463	260,207,901
May,..	193,119,348	201,471,216	212,575,920	27[illegible],006,304
June,..	194,255,701	230,814,576	249,935,040	271,415,473
July,..	209,332,677	243,297,723	254,045,040	310,697,104
August,..	217,561,920	267,109,360	25 ,641,034	299,800,082
September,..	217,229,652	237,137,088	266,145,900	293,016,784
October,..	185,678,001	191,542,516	246,406,659	264,920,902
November,..	176,132,600	165,033,042	200,101,295	294,796,231
December,..	199,592,696	208,044,966	192,616,708	211,366,383
January,..	209,884,992	233,131,600	236,844,455	259,410,174
February,..	176,088,647	189,344,751	227,597,773	257,166,480
March,..	183,712,966	209,589,260	246,776,084	269,636,668
TOTAL,..	2,386,108,454	2,558,330,218	2,777,817,349	3,168,760,609

Table showing the total quantity of water pumped, together with the annual and daily increase for the following years:

YEARS.	Total Quantity Pumped. GALLONS.	Annual Increase. GALLONS.	Average Daily Quantity Pumped. GALLONS.	Average Daily Increase. GALLONS.
1858	1,091,865,459		2,991,413	
1859	1,415,147,910	323,282,453	3,877,119	885,706
1860	1,716,786,552	301,338,642	4,703,525	826,406
1861	1,767,154,689	50,368,137	4,841,520	137,995
1862	2,217,279,739	450,125,050	6,074,739	1,233,219
1863	2,336,108,454	118,128,715	6,400,298	325,559
1864	2,523,339,218	187,230,764	6,913,259	512,961
1865	2,777,817,349	254,478,131	7,610,459	697,200
1866	3,168,760,609	390,943,260	8,681,536	1,071,077
Averages for nine years.	2,112,695,554	259,486,894	5,788,208	711,266

The following Tables exhibit in detail the operations of the Engines, Pumps and Boilers during the year just closed:

LARGE ENGINE.

MONTHS.	No. of days run.	No. of hours run per month.	Av. No. of hours run per day.	Av. gallons water pumped per day.	Total gallons water pumped per month	Pounds of coal consumed for pumping	Pounds of coal consumed when at rest.	Total coal used per month.	Total No. of revolutions per month.
1866.		H. M.	H. M.						
April	27	479 39	17 46	8,758,521	236,480,064	520,670	18,200	538,870	289,804
May	31	560 18	18 40	8,967,945	278,006,304	616,600	21,400	638,000	340,694
June	30	556 50	18 33	9,047,193	271,415,472	620,550	17,700	638,250	332,617
July	31	606 44	19 34	10,022,164	310,687,104	696,500	15,100	711,600	380,744
August	31	596 05	19 14	9,670,969	299,800,032	702,170	18,500	720,670	367,402
September	30	538 18	17 57	8,733,893	262,016,784	647,850	20,700	668,550	321,099
October	11	196 57	17 55	8,832,310	97,155,408	240,575	7,000	247,575	119,063
1867.									
January	24	439 45	18 19	8,671,258	208,110,192	547,425	16,700	564,125	255 037
February	28	530 25	18 57	9,184,517	257,166,480	690,000	16,800	706,800	315,155
March	7	137 25	19 38	9,690,583	67,834,080	166,808	3,400	170,208	83,130
Totals	250	4,642 26			2,288,671,920	5,449,148	155,500	5,604,648	2,804,745

SMALL ENGINE.

April.....	3	67	08	23	24	7,909,279	23,727,837	55,600	1,500	57,100	45,726
October.....	20	435	47	21	47	8,338,270	167,765,394	396,445	5,100	401,545	333,372
November.....	30	582	36	19	25	7,490,885	224,726,521	530,000	10,600	540,600	432,186
December.....	31	554	42	17	54	6,818,270	211,366,383	501,100	14,900	515,300	407,414
January.....	7	140	09	20	00	7,398,569	51,799,982	122,375	2,700	125,075	98,862
March.....	24	524	50	21	59	8,383,441	201,202,572	475,842	8,900	484,642	387,888
Totals.....	115	2,305	12				880,088,689	2,081,362	42,900	2,124,262	1,696,388

RECAPITULATION.

ENGINES.	Days run.	Hours run.	Total gallons of water pumped.	Total pounds coal used for pumping.	Coal used while at rest.	Total coal consumed.	Total revolutions made.
		H. M.					
Large.....	250	4,642 26	2,288,671,920	5,449,148	155,500	5,604,648	2,804,745
Small.....	115	2,305 12	880,088,689	2,081,362	42,900	2,124,262	1,696,388
Totals.....	365	6,947 38	3,168,760,609	7,530,510	198,400	7,728,910	4,501,133

MACHINE SHOP.

The following work has been done in the shop during the year:

190 new fire hydrants have been made, and 54 new stop valves, viz.:

4 inch.....	28
8 "	4
6 "	21
12 "	1

In addition to these a variety of work has been done for the various departments under control of the Commissioners, for which a slight charge has been made over the true cost, which leaves for the earnings of the shop over expenses, $2,160.28. There are remaining on hand of

New hydrants.....	32
" 4 inch cocks.....	30
" 6 " "	21
" 8 " "	4
" 12 " "	1

The value of these, together with the raw material on hand, amounts to $3,460.36.

During the past year but a small amount has been expended for repairs upon the machinery, those upon the old boiler being the largest, amounting to about $700. However, as soon as circumstances will permit, it will be judicious to make such alterations upon the "front" of large engine as may be necessary to adapt it to the form and arrangement of the new building. Also to refit the pumps and other parts of the old engine.

During the year just closed no accident of any kind has occurred to the machinery, nor has the city been deprived of water a moment from any cause under control of this department. This may be regarded as truly fortunate, when the circumstances attending the extraordinary extension and rebuilding of the works are considered. For it will be remembered that these important improvements required piles to be driven, and deep excavations to be made within a few feet of the source of supply.

The partial demolition of the water tower and walls of the main building was deemed necessary in order to guard against accident. The walls thus removed were replaced by rude wooden partitions, which, during the cold weather of last winter, exposed portions of the machinery to the action of frost, and rendered the premises very uncomfortable to the engineers and others while in the discharge of their duties.

In a foot-note of my last annual report, the new engines and well curb were referred to, with the remark, that the next (this) report would contain a more detailed description of the work then in progress. But owing to the character of the work and the inconvenience of executing it in connection with the old works, it has been delayed longer than was anticipated.

A portion of the building is in an unfinished state at this date, viz., March 2, 1868, and will not be fully completed until late next fall. It has, therefore, been deemed best to defer a full detailed report of the work for a subsequent annual report, which I would suggest be accompanied with suitable illustrations.

Respectfully,

DEWITT C. CREGIER,
Engineer.

CONNECTION BETWEEN LAKE TUNNEL AND PUMPING WELL.

The gate chamber mentioned in the last annual report has been completed from the surface of the ground to its bottom; but owing to the still unfinished state of the smaller tunnels connecting with it, the walls separating the different compartments, five in number, have not yet been built, and consequently the gates themselves are not yet in; but these are in an advanced state of forwardness and will no doubt be ready as soon as the rest of the work is ready for them.

The connection between the land shaft of the lake tunnel and the gate chamber has been completed and is of the same size and character of work as the lake tunnel itself. In this connecting tunnel a temporary bulkhead has been placed to protect the workmen from the lake tunnel water while they are completing the smaller tunnels connecting with the gate chamber.

It is again thought best to omit a detailed description of these works until the next annual report, when it is hoped that not only they but the new engine and pumps will be in successful operation.

In order to supply the city with water through the lake tunnel, now completed, while the connection between the gate chamber and the old pumping well is incomplete and until the new engine and pumps can be set in motion, it was thought best by the Board to make a *temporary connection* with the old inlet. This was done by means of a closely timbered horizontal drift, four feet square in the clear, leading eastwardly from the land shaft of the lake tunnel, under the immediate direction of Mr. H. Kroeschell, to a circular brick shaft, four feet interior diameter and about thirty feet deep, provided with two wooden frames and gates just below the level of low water. This shaft was built and sunk under the immediate direction of Mr. Cregier. Around the temporary shaft and the mouth of the old inlet a dam of clay, protected by sheeting, has been built, mostly against the old fish dam. A cheap wooden building over the mouth of the old inlet and the site of the shaft was first erected to protect the men and the

work from the severity of the weather, and serves now to protect the shaft from intruders.

INLET BASIN.

This is becoming more and more dilapidated. It is believed that the completion of the lake tunnel and the construction of a short tunnel from the gate chamber, about 800 feet long, to deeper water than can be maintained in the basin, as suggested in the last annual report and now again recommended, would render any further expense on the inlet basin, either to repair or dredge it out, useless. Fortunately the expense of keeping open a channel through the ice into the basin was very little compared with what it was the winter before, and it is hoped now that this may be entirely avoided hereafter, and the great annoyance suffered from fish getting into the water pipes cease.

DISTRIBUTING PIPES.

There were laid during the year ending March 31st, 1867, the following main and distributing pipes, viz:

SOUTH DIVISION.

On what Street.	Between what Streets.	Diameter in Inches.	Length in feet.
Archer Avenue...	From Reuben east.....	6	870
Indiana " ..	Twenty-third and Twenty-fourth.....	6	700
" " ..	From Thirty-first south.	6	697
" " ..	From Twenty-fifth south.....	6	1,650
Michigan " ..	Twentieth and Twenty-first.....	6	520
Cottage Gr. " ..	From Douglas av. north.....	6	620
" " " ..	To Seipp & Lehman's Brewery.....	4	800
Third " ..	Twelfth and Fourteenth.....	4	1,280
Douglas " ..	Cottage Grove av. and Soldiers' Home.....	6	720
Kankakee " ..	From Twenty-fifth south.....	6	3,775
Calumet " ..	Twenty-sixth and Twenty-ninth.....	6	1,390
Wentworth " ..	Archer av. and Twentieth st.....	4	410
" " ..	Sixteenth and Seventeenth.....	4	480
Butterfield Street	Archer av. and Twenty-second.....	4	960
Prairie Avenue..	Nineteenth and Twenty-first.....	6	940
Cologne Street..	Main and Deering.....	4	1,200
Twenty-sixth " .	Michigan and Indiana avs.....	6	432
Madison " .	State st. and Wabash av.....	8	430
Wallace " .	Archer av. and McGregor st.....	6	468
Wabash Avenue.	Twenty-second and Twenty-third.....	6	600
	Hydrants.....	4	540
	Total,.....		19,482

WEST DIVISION.

On what Street.	Between what Streets.	Diameter in Inches.	Length in Feet.
Stewart Avenue.	Maxwell and Liberty	4	330
Western "	Madison and Washington	6	660
Bunker Street.	Clinton and Canal	4	406
" "	Jefferson and Desplaines	4	490
Carrol "	Elizabeth and Ann	4	600
Coolidge "	Rucker and Loomis	4	1,410
Catherine "	Canal and Union	4	1,650
Fulton "	Ada and Sheldon	4	492
Hoyne "	Madison and Van Buren	6	1,795
Green "	Van Buren and Jackson	4	490
Harrison "	From Morgan west	6	900
" "	Halsted and Silver	6	590
Indiana "	Paulina and Lincoln	4	1,400
" "	From Elizabeth west	4	414
" "	Curtis and Rucker	6	800
" "	Carpenter and Green	6	550
" "	" " "	4	800
Jefferson "	Mitchell and Barber	6	240
Liberty "	Stewart av. and Canal	4	590
Lake "	Paulina and Wood	4	700
Madison "	From Western av. east	8	50
Newberry "	From Maxwell north	4	506
Norton "	Gurley and Polk	4	460
Paulina "	Indiana and Hubbard	4	410
Jefferson Park.	To Adams st	4	40
Ruble Street.	From Canalport av. south	4	360
" "	From Sixteenth st. south	4	500
Reuben "	Madison and Jackson	6	1,495
" "	Cornell and Public School	6	450
" "	Archer av. and Mulligan	6	772
Twenty-sec'nd St	Halsted and Rucker	4	1,300
" "	" " "	6	1,642
Twelfth Street.	Rucker and Loomis	8	1,418
Van Buren "	From Aberdeen west	6	740
Walnut "	Hoyne and Robey	4	660
Halsted "	From Third st. north	6	250
Ann "	Carrol and Fulton	6	357
" "	Washington and Randolph	6	456
Rucker "	From Twenty-second south	6	550
Rumsey "	From Chicago av. north	6	500
Sheldon "	From Fulton st. north	4	200
Peoria "	Kinzie and Hubbard	4	420
Adams "	From Throop west	6	970
Madison "	From Throop east	8	760
	Hydrants	4	868
	Total		31,267

NORTH DIVISION.

On what Street.	Between what Streets.	Diameter in inches.	Length in feet.
Clybourne Ave..	Halsted and Blackhawk	6	770
Bremer Street ..	Chicago av. and Oak st	4	280
Elm " ..	From Green Bay east	4	340
Hurlbut " ..	Seigel and Clybourne av	6	576
" " ..	Wisconsin and Center	6	700
Huron " ..	Clark and Wells	6	850
Hill " ..	From Market east	4	70
Illinois " ..	" " "	6	90
Larrabee " ..	Vedder and Clybourne av	6	630
Market " ..	From Wendell north	4	392
" " ..	Indiana and Michigan	6	630
Oak " ..	End of pipe east of Rush st. and the Lake..	4	145
Oakwood " ..	" " " " " " " " " " ..	4	280
Penn " ..	Division and Vedder	4	524
Whiting " ..	State and Green Bay road	4	350
Wendell " ..	Franklin and Market	4	432
Belden Avenue..	Clark and Larrabee	4	300
Superior Street..	Market and Townsend	4	800
Clark " .	From Elm south	6	172
Gardner " .	From Halsted east	4	1,180
	Hydrants	4	320
	Total		9,781

In addition to the foregoing, the great and increasing necessity for a larger supply of water rendered it necessary in some localities to take up the pipe which had been laid and lay down larger sized, viz:

On what Street.	Between what Streets.	Taken up.		Laid down.	
		Diameter in inches.	Length in feet.	Diameter in inches.	Length in feet.
Madison street..	Throop and May	6	1,100	8	1,100
Twelfth " .	Third av. and Clark	6	390	12	390
Wabash avenue.	Lake and Randolph	4	560	8	560
William street..	From Lincoln west	6	1,260		
Lincoln " ..	William st. and the cattle yards.	6	1,250		

The total length of pipes laid in the whole city during the year was 11 miles and 2,470 feet.

The total length of pipes of different sizes in the city, April the 1st, as nearly as can be ascertained, was as follows, viz.:

24	inch	cast	iron	main	pipe			22,082	feet.
16	"	"	"	"	"			10,610	"
12	"	"	"	"	"			9,830	"
30	"	wrought	iron	river	pipe,	State	street	280	"
24	"	"	"	"	"	Chicago	avenue	236	"
24	"	"	"	"	"	Rush	street	530	"
12	"	"	"	"	"	Adams	street	176	"
12	"	cast	"	distributing	pipe,	Adams	street.	844	"
10	"	"	"	"	"	"	"	7,862	"
8	"	wrought iron distributing and syphon pipe on Archer Avenue						90	"
8	"	Cast iron distributing pipe						70,434	"
6	"	"	"	"	"			281,121	"
4	"	"	"	"	"			392,122	"
3	"	"	"	"	"			30,388	"
		Total,						826,605	"

Or 156 miles and 2,925 feet.

ERRATA.

In the "Fifth Annual Report," in the lengths of water pipe laid in the South Division, the item "Division south of Twenty-fourth," should have read, Wabash avenue south of Twenty-fourth.

In the lengths given as laid in the West Division, the item "Augusta, between Madison and Milwaukee avenue," should have read, Augusta, between Reuben and Milwaukee avenue, and the item, "Jefferson, north of Union, 270 ft. 6 in.," should have read, Jefferson, north of Meagher, 408 ft. 6 in.

In the lengths given as laid in the North Division, the item, "Mohawk, west of Clark," should have read, Belden avenue, west of Clark, and the item, "Belden avenue, north of North avenue," should have read, Mohawk, north of North avenue.

HYDRANTS.

During the year ending April 1st, the following new hydrants were put in, viz.:

SOUTH DIVISION.

1 N. E. corner Calumet avenue and Twenty-third street.
1 N. W. " Wallace and McGregor streets.
1 N. W. " Wabash avenue and Twenty-third street.
1 S. W. " Michigan avenue and Twenty-ninth street.
1 N. W. " State and Thirteenth street.
1 S. W. " Michigan avenue and Twenty-sixth street.
1 N. W. " Butterfield and Twenty-first streets.
1 At west end of pipe on Elgin street.
1 On Rush street at the bridge.
1 N. W. corner Wentworth avenue and Archer avenue.
1 West side Calumet avenue, between 26th and 29th streets.
1 N. W. corner Kankakee avenue and Gano street.
1 S. W. " " " " Twenty-ninth street.
1 S. E. " Reuben street and Archer avenue.
1 S. E. " " " " Mulligan.
1 At the Union Rolling Mills.
1 At Seipp and Lehman's Brewery, on Northern avenue.
1 N. E. corner Cottage Grove and Douglas avenues.
1 N. W. " Kankakee avenue and Thirty-third street.
1 S. W. " Butterfield and Twentieth streets.
1 N. W. " Michigan avenue and Twenty-first street.
1 S. W. " Butterfield and Archer avenue.
1 North side of Cologne, between Main and Deering.
1 N. W. corner Indiana avenue and Twenty-sixth street.
1 S. W. " Wabash avenue and Thirteenth street.
1 At the Engine House, Twenty-second street.
26 Total in the South Division.

WEST DIVISION.

1 N. W. corner Madison and Ann.
1 N. W. " Liberty and Stewart avenue.

1 North side Washington, between Robey and Hoyne.
1 N. W. corner Halsted and Twenty-second.
1 N. W. " Carrol and Ann.
1 N. E. " " " Elizabeth.
1 N. W. " Fulton and Ada.
1 S. W. " Reuben and Adams.
1 N. W. " " " Monroe.
1 N. E. " Bunker and Clinton.
1 N. W. " Lake and Wood.
1 N. W. " Indiana and Lincoln.
1 N. W. " " " Wood.
1 N. W. " " " Paulina.
1 N. W. " Harrison and Aberdeen.
1 N. W. " " " Sholto.
1 Ruble at end of pipe south of Sixteenth street.
1 S. W. corner Indiana and Rucker.
1 N. W. " " " May.
1 N. W. " " " Curtis.
1 N. E. " Walnut and Hoyne.
1 N. E. " Madison and Western avenue.
1 N. W. " Newberry and Maxwell.
1 N. E. " Bunker and Desplaines.
1 N. W. " Adams and Hoyne.
1 S. W. " Hoyne and Jackson.
1 N. W. " Peoria and Kinzie.
1 N. W. " Hoyne and Monroe.
1 N. W. " Coolidge and Loomis.
1 N. E. " " " Throop.
1 N. W. " Rucker and Twenty-second.
1 N. W. " Fisk " "
1 N. W. " May " "
1 N. W. " Canalport avenue and Twenty-second.
1 Rucker street, at the Gas Works.
1 N. W. corner Indiana and Morgan.
1 N. W. " " " Green.
1 N. W. " " " Sangamon.
1 N. E. " Adams and Loomis.
1 N. W. " Indiana and Carpenter.

1 N. E. corner Twelfth and Throop.
1 N. W. " " " Loomis.
1 N. E. Stewart avenue and Twelfth.
43 Total in the West Division.

NORTH DIVISION.

1 N. W. corner Market and Hill.
1 City R. R. Stables, N. Clark street.
1 N. E. corner Huron and La Salle.
1 N. W. " Market and Michigan.
1 S. W. " " " Illinois.
1 S. W. " Superior and Sedgwick.
1 N. W. " Clybourne avenue and Weed.
1 N. E. " Superior and Townsend.
1 S. E. " Clybourne avenue and Halsted.
1 N. W. " Belden avenue and Larrabee.
1 Ontario street, west of the Glass Works.
1 N. W. corner Hurlbut and Centre.
1 N. W. " " " Linden.
1 N. W. " " " Menomonee.
1 N. W. " " " Wisconsin.
15 Total in North Division.

In all 84. Making the total number in the city April 1, 790.

One hundred and ten hydrants were taken out and removed, and eight received more or less repairs. Mr. Cregier's patent continues to give perfect satisfaction.

About five hundred and twenty-five hydrants were found frozen, and thawed out, during the winter, which compares very favorably with the winter previous, and experience proves that when the sewerage is sufficiently extended to permit of connections with the different hydrant chambers and the streets raised to grade, but little if any trouble need be apprehended from frost. About four hundred and eighty-five hydrants are now connected with the sewers, and they are all being connected as fast as the sewers are extended, and rendered consequently less liable to freeze.

STOP-COCKS.

The following stop-cocks have been put in during the ending April 1st, 1867, viz.:

SOUTH DIVISION.

1 6 inch, Michigan avenue, south line of Twenty-second.
1 6 " Wabash " " " "
1 6 " Indiana " " " "
1 6 " Archer " at the east side of the river.
1 4 " Cologne street, west line of Main street.
1 4 " Wentworth avenue, south line of 16th street.
1 4 " Sherman street, south line of Van Buren.
1 4 " Northern avenue, opposite the Brewery.
1 6 " Kankakee avenue, south line of Thirty-first stree
1 6 " Van Buren street, opposite the Passenger Depot
10 Total number in South Division.

WEST DIVISION.

1 4 inch, Twenty-second street, west line of Halsted.
1 4 " Carrol street, west line of Elizabeth.
1 6 " Reuben street, south line of Adams.
1 4 " Indiana street west line of Lincoln.
1 4 " " " " " Elizabeth.
1 6 " Van Buren street, west line of Rucker.
1 8 " Madison street, west line of Throop.
1 8 " " " " " Rucker.
1 4 " Indiana " " " "
1 6 " Adams street, west line of Throop.
1 4 " " " Jefferson Park branch.
1 4 " Peoria street, north line of Kinzie.
1 4 " Coolidge street, west line of Rucker.
1 8 " Twelfth " " " "
1 6 " Twenty-second street west line of Rucker.
1 6 " Rumsey street, north line of Chicago avenue.
1 6 " Harrison street, west line of Halsted street.

1 4 inch, Desplaines street, south line of Sixteenth street.
18 Total number in West Division.

NORTH DIVISION.

1 4 inch, Whiting street, east line of N. State.
1 4 " Bremer street, north line of Oak.
1 6 " Penn street, north line of Division.
1 6 " Market street, south line of Illinois.
1 6 " Hurlbut street, north line of Centre.
5 Total number in North Divison.

In all 33; making, with those previously put in, 402 in the city. Besides the stop-cocks newly established, three old ones were renewed by others of our own make.

RESERVOIRS.

These remain about the same as at the date of the last annual report. The north and south reservoirs, in consequence of their unsightly surroundings, have a very neglected appearance. Rude boys break the glass in the windows, so that nearly the whole of it has to be renewed once a year.

QUALITY OF THE WATER.

This was very bad some five weeks ago, when the heavy rains changed the water in the river. Now that the lake tunnel is in operation, we hope to be entirely freed from the necessity of using offensive water for domestic purposes hereafter.

THE LAKE TUNNEL.

The contractors, Messrs. Dull & Gowen, closed up the masonry in the main tunnel the latter part of November last, leaving a small space, which was filled with a neat marble stone by his Honor, the Mayor, assisted by the City Council and the Board of Public Works, on the 6th day of December. There remained then the side chambers, used during the construction of the work, to be filled up, and the entire tunnel to be cleaned out. This work was done in a very careful manner, and the water first let into the tunnel from the lake on the 8th day of March. On the 11th the tunnel was filled to the level of the lake. The water was then pumped out sufficiently to allow a boat to pass upwards of half way from the crib to the land shaft.

It could not be perceived that a single brick had been disturbed or the slightest fracture had anywhere taken place by the pressure to which the masonry had been subjected.

As it was very desirable to use the tunnel as soon as possible, it was thought unnecessary to pump out the whole of the water, and the tunnel was again filled. On the 25th, as is well known, the formal and public opening of the work took place. Much that is interesting and valuable in connection with this work, as well as the names of those who have rendered important aid in carrying it out, might now be mentioned; but it is thought best to defer these for a future report, to be accompanied by suitable illustrations.

SEWERAGE.

A complete statement of the operations of this department will be found in the following report of the Principal Assistant:

CHICAGO, March 31, 1867.

To E. S. CHESBROUGH, ESQ., *City Engineer:*

SIR: Herewith is submitted a report of the sewers built during the past year, and their location; also a statement of the total amount of sewers built in the three divisions of the city up to this date. Also, returns of the repairs and cleansing of the sewers, done during the past year, and of the private drains which have been connected with the sewers for the same time.

LENGTH IN FEET OF SEWERS BUILT TO APRIL 1ST, 1867.

Diameter in feet.	S. DIVISION.		W. DIVISION.		N. DIVISION.		TOTAL, THREE DIVISIONS.		
	Previous to April 1, 1866.	From April 1, 1866, to April 1, 1867.	Previous to April 1, 1866.	From April 1, 1866, to April 1, 1867.	Previous to April 1, 1866.	From April 1, 1866, to April 1, 1867.	Totals Previous to April 1, 1866.	Totals April 1, 1866, to April 1, 1867.	Total Sewers.
6	1,419		1,292		3,895		6,606		6,606
5	3,019	1,248	26,255	2,085	10,382	742	39,656	4,075	43,731
4½		1,033	20,158	2,665	4,591	1,667	24,749	5,365	30,114
4	1,962	1,334	7,201	7,325	5,498		14,651	8,659	23,310
3½				1,332				1,332	1,332
3	16,627	1,324	1,613		5,579		23,819	1,324	25,143
2½	28,419	4,649			3,544		31,963	4,649	36,612
2¼	6,359						6,351		6,359
2	28,744	4,814	47,104	4,966	45,044	2,729	120,892	12,509	133,401
1 ft pipe	69,815	2,185	28,422	5,372	29,730	2,557	127,967	10,114	138,081
9 in. "						100		100	100
Total,..	156,354	16,567	132,045	23,745	108,263	7,795	396,662 for 75 662/5280 miles.	48,127 or 9 607/5280 miles.	84 1269/5280 miles.
Total,	172,941		155,790		116,058				

CATCH BASINS AND MAN HOLES.

	Built from April 1, 1866, to April 1, 1867.			Previously Built.	Total.	Average Cost.
	S. Div.	W. Div.	N. Div.			
Catch Basins...	135	143	49	1,907	2,234	$70.36
Man Holes.....	108	122	41	2,756	3,027	

Unexecuted contracts, to be completed in 1687, remain as follows:

South Division—Lineal feet of 2½ and 2 feet Sewers,....2,664 feet. Estimated cost,..$10,000
West Division—Lineal feet of 5, 4½ and 2 feet Sewers,..3,125 " Estimated cost,.. 20.000
North Division—Lineal feet of 5 and 2 feet Sewers,.....2,248 " Estimated cost,.. 15.000

Total,.....$45,000

RETURN OF LOCATION AND LENGTH OF SEWERS BUILT DURING THE YEAR ENDING APRIL 1ST, 1867.

LOCATION.			5 ft.	4½ ft.	4 ft.	3½ ft.	3 ft.	2¼ ft.	2 ft.	1 ft.
SOUTH DIVISION.										
ON WHAT ST.	FROM	TO								
State	Twenty-fourth	Twenty-sixth	1,248							
McGregor	Ogden slip	Stuart av		1,033						
Twenty-sixth	State	Indiana av			1,334					
Twenty-sixth	Indiana av	Calumet av					897			
Stuart av	Chicago River	Twenty-first					427			
Michigan av	Twenty-sixth	Twenty-fifth						665		
Wabash av	Twenty-second	Twenty-third						668		
Prairie av	Twenty-sixth	Twenty-fifth						668		
Twenty-first	Stuart av	Archer av						1,298		
Indiana av	Twenty-second	Twenty third						664		
Indiana av	Twenty-sixth	Twenty-fifth						668		
Michigan av	Twenty-fourth	Twenty-fifth							628	
Wabash av	Twenty-third	Twenty-fourth							665	
Prairie av	Center of 25th	Northward							17	
Archer av	Twenty-first	Burnside							1,134	
Twenty-first	Archer av	Wentworth av							100	
Purple	Twenty-first	Archer av							332	
Stuart av	Twenty-second	Archer av							371	
Indiana av	Twenty-third	Twenty-fifth							1,327	
Archer av	Stuart av	Fennill							240	
Archer av	Fennill	Twenty-first								1,217
Archer av	Burnside	State								630
Thirteenth	E. line Wab. av	W. line Wab. av								100
Fourteenth	End 2 ft. sewer	W. line Wab. av								25
Twentieth	E. line Wab. av	W. line Wab. av								100
Twenty-first	E. line Wab av	W. line Wab. av								100
Twenty-fourth	End of sewer	Lake, at br'kw'r								113
WEST DIVISION.										
Taylor	River	63 ft. W. of Jeff.	2,085							
Van Buren	Halsted	Rucker		2,665						
Washington	291 W. of Reub.	Roby			2,373					
W. Indiana	Green	Rucker			2,338					
Polk	Blue Island av.	Rucker			2 058					
Chicago av	Milwaukee av.	Rucker			556					
Washington	Roby	Leavitt				1,332				
Green	W. Indiana	Hubbard							443	
Peoria	W. Indiana	Hubbard							443	
Morgan	Washington	Lake							870	
Carpenter	Randolph	Lake							462	
May	Randolph	Washington							406	
Wood	Park av	Washington							335	
Lincoln	Madison	Washington							651	
Morgan	Monroe	Jackson							942	
Reuben	Washington	Warren							364	
Union	Twelfth	O'Brien								420
O'Brien	Union	Westward								944
Jackson	Halsted	Aberdeen								1,085
Jackson	Rucker	Loomis								1,338
Aberdeen	Monroe	Northward								150
Monroe	Rucker	Throop								660
Sangamon	Van Buren	Jackson								420
Wood	Washington	Southward								180
NORTH DIVISION.										
North Clark	Maple	Division	742							
North av	Dayton	Larrabee		1,067						
Oak	Wells	Market							813	
White	Wells	Market							813	
Chestnut	Clark	LaSalle							343	
Division	Clark	State							700	
Franklin	Superior	½ way Pearson to Hinsdale								794
Franklin	Hinsdale	White								264
Franklin	Oak	Northward								120
Dearborn	Elm	Southward								264
E. Hinsdale	State	Eastward								261
Huron	Wells	Franklin								330
Superior	Wells	Franklin								264
German	Pine	Westward								9in180
Totals, three Divisions			4,075	5,305	8,659	1,332	1,324	4,649	12,509	10,214
Average costs, per foot			$7.31	$6.32	$0 08	$5.81	$5.80	$3.37	$3.61	$2.33

REPAIRS OF SEWERS, CATCH BASINS, MAN HOLES AND COVERS.

	S. Division.		W. Division.		N. Division.		Totals.	
	FT.		FT.		FT.		FT.	
Feet of Sewers repaired and cost of work	287	$1,486.00			55	$1,155.27	342	$1,591.27
No. of Catch Basins and M. Holes repaired, and cost of work.	72	403.71	164	$1,135.15	76	565.00	312	2,103.86
No. of Covers for same, restored and repaired,	316	1,688.98	142	1,284.49	209	1,123.01	667	4.096.48
Totals of cost,		$3.628.69		$2,419.64		$1,843.28		$7,791.61

CLEANSING OF SEWERS AND CATCH BASINS.

MODES OF CLEANSING.	S. Division.		W. Division.		N. Division.		Totals.		
	Feet cl'ns'd	Cost.	Feet cl'ns'd	Cost.	Feet cl'ns'd	Cost.	Feet cl'ns'd	Cost.	pr. ft.
By Chain Machine,	34,065	$4,334.93			38.170	$6,486.69	72.535	$10,821.62	15c
By Flush'g Wagon,	65,560	2,225.07	45,390	$1.355.67	47,950	1,634.14	158,910	5,214.88	3¼c
By Scrapers—Main Sewers.	8,620	2,067.47	52,960	3.488.18	21,920	1,622.03	83,520	7,177.68	8½c
	108,265	8,627.47	98,360	4.843.85	108,340	9,742.86	314,965	$23,218.18	
C. Basins cleansed, No. of.	1,006	2.134.00	1,029	2,298.03	434	798.95	2,469	5,230.98	each. 2.12
Total Costs—Sewers and C. Basins,		10,761.47		7,141.88		10,541.81		$28,445.16	

Of the above 314,965 linear feet of sewers cleansed, 252,445 feet were located on unpaved streets, and the expense of the work was $21,193.91, or 8½ cents per foot: while the remaining 62,520 feet of sewers cost but $2,024.27, or 3¼ cents per foot. Of the whole length of sewers laid—444,789 feet—348,089 feet are on unpaved streets, and the cleansing required for the same being, as above, $21,193.91, was at the rate of six cents per foot; whereas, the cleansing required for the remaining 96,700 feet, upon paved streets, was but $2,024.27, or about two cents per foot: about two-thirds the length of the sewers on the paved streets having been cleansed, while the cleansing of the sewers on the unpaved streets amounted to five-sevenths of the whole length.

It will be seen by these facts that not only has the cleansing, which has been done of the sewers on the paved streets, cost much less than the same amount on the unpaved ones, but that much less cleansing is required for the sewers on the paved

streets, than for those where the surface is not protected by paving, from being washed into them during rain storms.

PRIVATE DRAINS CONNECTED WITH THE SEWERS FROM APRIL 1ST, 1866, TO APRIL 1ST, 1867.

PART OF CITY.	6 inch Drains.	9 inch Drains.	12 inch Drains.	Total in 1866-67.	Total previously laid.	Total April 1st, 1867.
South Division,.....	1,343	36	6	1,385		
West Division,.....	1,534	53	9	1,596		
North Division,.....	740	10	1	751		
Totals,.....	3,617	99	16	3,732	5,138	8,869

The number of private drains laid during the past year has been very much greater than those laid during any previous year, being about 42 per cent. of the whole number connected with the sewers. The result has been a very manifest improvement of the condition of all the sewered streets.

Yours respectfully,

WM. H. CLARKE,

Prin. Ass't Engineer.

CONDITION OF THE RIVER.

No material change in regard to the occasional offensiveness of the river has taken place during the year. It so happened that during the prevalence of the cholera, which for a short time was alarming, the river was not in a very bad condition.

HARBOR.

The north pier extension has been left as it was at the date of the last annual report, and the United States Government has commenced a still further extension of the protection to the north side of the harbor entrance, in connection with an enclosure for an outside harbor to be made by the Chicago Dock and Canal Co.

The bar, which a year ago was beginning to form around the south end of the north pier, has extended still further southward, and increased in height and breadth; but there is still a good entrance for the largest class of lake vessels. Whether

the United States pier shall be completed or not during the present season, it is understood to be the intention of the engineer, Col. Wheeler, to have the bar dredged away as soon as it may be necessary, to preserve navigation. A channel fifty feet wide and nine feet deep at low water, was dredged in the North Branch from the Indiana street bridge to near North avenue, and should be continued to the Rolling Mill the coming season.

WASHINGTON STREET RIVER TUNNEL.

Specifications for a revised plan of this work were prepared, and a contract for its execution entered into with Messrs. Stewart, Ludlam & Co. They commenced excavating on the 2d of October between Clinton and Canal streets, and soon after on the east side of the river near Market street. They began the eastern coffer dam on the 6th of December, but have as yet laid no masonry. A detailed description of this work will be omitted in this report, but it is hoped one may be presented with the next.

DOCK LINE SURVEY.

This has been completed from the mouth of the main river to Bridgeport on the South Branch, and to the city limits on the North Branch. The work thus far has been done with unusual care and accuracy. The fear that the width of the South Branch could not, without enormous expense, be made 200 feet wide, has, upon examination by the Board, given place to the conviction that it ought to be done in order to meet the probable wants of commerce whenever the Illinois and Michigan canal shall be enlarged enough to let steamboats pass between this city and the Mississippi River. As the survey is not entirely finished, no accurate estimate has yet been made of the probable cost of such a widening of the South Branch. The North Branch could be made 200 feet wide without any serious difficulty, there being very little valuable property on it to be destroyed by such an improvement.

FINANCIAL STATEMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1867.

WATER DEPARTMENT.

	Dr.	*Cr.*
Water Works,	$2,170,989.32	
Water Works, New Engine House,	36,858.12	
Water Works, New Engine,	103,662.83	
Bills Payable—Water Fund,		$286,859.81
Water Works, New Inlet,	24,936.29	
Water Works, Income,		1,905,820.03
Water Works, New Tower,	37,473.24	
Water Loan Bonds, six per cent.,		1,030,000.00
Water Loan Bonds, seven per cent.,		790,000.00
Water Loan Interest,	700,643.16	
Water Works Expenses and Repairs,	682,780.03	
Discount on six per cent. Water Loan Bonds,	50,375.20	
Water Fund in hands of City Treasurer,	8,848.96	
Water Works Stock,	16,871.80	
Water Works Coal,	7,762.79	
Duncan, Sherman & Co.—Coupon Account,	149,245.00	
Water Works Service Cocks,	459.36	
Water Pipes—Pipe on hand,	12,666.78	
Pumping Works—Stock on hand,	9,106,96	
	$4,012,679.84	$4,012,679.84

WATER FUND.

STATEMENT of the Cash Receipts by the Board of Public Work from April 1st, 1866, to March 31st, 1867, inclusive; a detailed statement of the cost of the various operations co ducted by the Board during the same time:

RECEIPTS.

Water Tax Collected,	$301,124.07	
Proceeds of 161 Bonds, 7 per cent., including interest,	157,110.75	
Proceeds of Temporary Loan,	252,159.81	
Advance on Bonds,	25,000.00	
Received for tapping pipes,	10,188.60	
Received for shutting off and letting on water,	339.80	
Received for sale of hydrants,	310.00	
Received for sale of stop cocks,	295.00	
Received for sale of coal,	151.07	
Received for sale of pipe,	691.76	
Received for sale of service cocks,	33.40	
Freight on pipe refunded,	35.05	
Advertising,	203.96	
Maps of City of Chicago,	17.50	
W. Lill, accrued interest on mortgage,	192.50	
Costs on Taxes,	35.00	
Setting Meters,	277.55	
Labor,	1,340.50	
Miscellaneous items,	51.75	
		$750,058.

EXPENDITURES.

ADDITION TO WATER WORKS.

		Cash Payment.	*True Cost.*
DISTRIBUTING PIPES LAID.			
Cast Iron pipe, 4, 6, 8 and 12 inch,.....	$37,287.17		
Testing and laying pipe, and building catch basins,.....	13,773.57		
Trenching and backfilling,.....	17,600.88		
Lead, ...	5,772.51		
Tapers, caps, sleeves, bends and branches,	1,022 34		
Coal,.....	152.69		
Gasket	156.10		
Hay, oats and feed,.....	286.69		
Advertising for proposals for trenching,..	79.97		
Brick for catch basins,.....	2,906.98		
Cement,.....	1,400.50		
Drain pipe,.....	79.20		
Tools,.....	16.00		
Union Rolling Mills—pipe and putting the same under the river,.....	4,782.14		
Hauling pipe,.....	1,150.90		
Connecting pipe,.....	1,085.06		
Filling and paving on Wabash avenue,..	204.28		
Repaving,.....	22.50		
Repairing harness,.....	18.15		
		$87,797.63	
ADD—			
Pipe used previously paid for,.....	$29,214.53		
New hydrants put in,.....	4,150.00		
New stop cocks put in,.....	1,335.00		
Labor at shop,.....	67.45		
Discount on seven per cent. bonds,...	625.78		
	$35,392.76		
DEDUCT—			
Pipe sold and labor for private parties,	1,601.16		
	$33,791.60		$121,589.23
LAKE TUNNEL.			
Dull & Gowen, balance in full for all dues,	$94,562.89		
Services of engineer,.....	600.00		
Services of draughtsmen,.....	1,058.32		
Amounts carried forward,.....	$96,221.21	$87,797.63	$121,589.23

		Cash Payment.	*True Co*
Amounts brought forward,....	$96,221.21	$87,797,63	$121,58
Services of inspectors,.....	7.789.75		
Castings and iron work,.....	332.16		
Piles,.....	201.80		
Use of tugs,.....	4,185.17		
Artesian well,.....	337.67		
Labor,.....	756.42		
Cleaning tunnel,.....	1,715.96		
Horse keeping,.....	140.52		
Lead,.....	52.68		
Expenses of formal opening and celebration,.....	979.18		
Drifts from shafts,.....	800.00		
E. W. Smith, consulting engineer,.....	600.00		
Copies of plans,.....	205.00		
Connecting with well,.....	180.86		
Coal,.....	363.00		
Repairing life boat,.....	63.81		
Rope,.....	61.73		
Use of scow,.....	58.00		
Use of surveying instruments,.....	50.00		
Rubber boots,.....	42.00		
Lamps and oil,.....	18.63		
Brass figures,.....	98.95		
Repairing instruments,.....	16.50		
Securing life boat,.....	15.00		
Hose, pump and pipe,.....	13.60		
Acid,.....	11.25		
Miscellaneous,.....	70.50		
		115,381.35	
ADD—			
Amount of expenditures previous to April 1st, 1866,.....	$339,528.94		
Discount on seven per cent. bonds sold,	2,353.24		
Labor at shop,.....	581.42		
	$342,463.60		457,84
NEW WELL CHAMBER.			
Balance for foundation castings and fr't,.	$1,661.64		
Curb,.....	3,294.00		
Labor,.....	484.75		
Designs and plans,.....	300.00		
Draughtsman,.....	125.00		
Lumber,.....	210.66		
Inspecting,.....	700.00		
Amounts carried forward,.....	$6,776.05	$203,178.98	$579,43

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$6,776.05	$203,178.98	$579,434.18
Coal,.....	211.75		
Hauling stone,.....	72.00		
Pumping out water,.....	25.00		
		7,084.80	
ADD—			
Amount of expenditure in 1865,.....	$3,959.95		
Labor at shop,.....	8,481.55		
Dredging machine,.....	542.52		
	$12,984.02		20,068.82
TEMPORARY CONNECTION WITH LAKE TUNNEL.			
Labor,.....	$548.90		
Lumber, ...	1,530.94		
Inspectors.....	276.00		
Coal,.....	122.50		
Rope,...	17.78		
Pipe,.....	8.55		
Tools,.....	6.38		
		2,511.05	
ADD—			
Labor at shop,.....	$907.77		3,418.82
ENGINE HOUSE LOT.			
Cost of lot,...			40,000.00
Total addition to cost of Water Works, not including new engine, and buildings (at present incomplete).....		$212,774.83	$642,921.82
NEW ENGINE.			
G. W. Quintard—on account of engine,..	$59,788.16		
Foundation,.....	4,843.88		
Stone for foundation,.....	1,948.65		
Designs, plans and supervising,.....	1,500.00		
Draughtsman,.....	335.00		
Engineer's expenses to New York,.....	155.00		
Labor,.....	15.00		
		$68,585.69	
ADD—			
Labor at shop for foundation,.....	$2,159.94		
Labor at shop for G. W. Quintard,...	142.47		
Discount on seven per cent. bonds sold,	532.70		
	$2,835.11		$71,420,80
NEW ENGINE HOUSE.			
A. Walbaum, on account of contract,....	$28,630.00		
Services of architect,.....	1,700.00		
Amounts carried forward,....	$30,330.00	$68,585.69	$71,420.80

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$30,330.00	$68,585.69	$71,420.9
Piles and driving,.....	1,090.82		
Temporary structure over engine,.....	547.60		
Inspector,.....	580.50		
Designs and plans,.....	235.00		
Clearing yard,.....	529 62		
Draughtsman, ...	125.00		
Expense of celebration at laying of corner stone,.....	331.67		
Labor,.....	161.25		
Tablet for corner stone,.....	80 00		
Photographs of buildings,.....	75.00		
Advertising for proposals,.....	29.06		
Lumber,.....	16.72		
Tape measure,.....	6.00		
		34,138.24	
ADD—			
Labor tearing down old building,....	$1,768.55		
Labor at shop,.....	597.97		
Discount on seven per cent. bonds sold,	186.18		
	$2,552.70		36,690.9
NEW TOWER.			
A. Walbaum, on account of contract,....	$28,650.00		
A. Walbaum, on account of stairway,....	2,000,00		
C. Reissig & Co., on account of standing column,.....	2,800.00		
Piles and driving,.....	2,130.24		
Inspector,.....	311.50		
Services of architect,.....	800.00		
Expenses of celebration at laying of corner stone,.....	335.15		
Designs, plans and supervising,.....	100.00		
Photographs of buildings,.....	75.00		
Tablet and corner stone,.....	80.00		
		37,281.89	
ADD—			
Discount on seven per cent. bonds sold,	$191.35		37,473.24
NEW INLET.			
Labor, ...	$9,260.61		
Castings,.....	1,928.30		
Iron work,.....	1,910.37		
Inspectors,.....	836.50		
Draughtsman,.....	500.00		
Brick,.....	4,025.13		
Amounts carried forward,....	$18,460.91	$140,005.82	$145,584.98

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$18,460.91	$140,005.82	$145,584.98
Cement,....	1,340.06		
Lumber,....	593.71		
Drifts from shafts,....	2,200.00		
Coal,....	259.00		
Shovels, pails and lanterns,....	61.49		
Rubber boots,....	42.00		
Pipe fittings,....	649.98		
Rope, blocks and oakum,....	199.41		
Gravel,....	96.00		
Setting glass,....	24.52		
Engineer,....	24.00		
Suction gutter and stove pipe,....	90.60		
Use of steam pump,....	441.43		
Patterns,....	256.70		
Nails,....	34.31		
		24,774.12	
ADD—			
Labor at shop,....	$162.17		24,936.29
		$164,779.94	$170,521.27

WORKING EXPENSES AND REPAIRS.

EXPENSES AT PUMPING WORKS.

		Cash Payment.	*True Cost.*
Salary of Engineer and three assistants..	$ 6,269.96		
Labor....	16,264.25		
Coal, 2,643 tons 460 lbs....	22,002.56		
Coal at shop....	167.56		
Oil and tallow....	1,088.72		
Hydrant castings....	4,403.04		
Brass castings....	1,900.63		
Bar iron, nuts, rivets, steel, and washers,	1,344.78		
Gasket, packing, and belting....	172.28		
Waste....	236.24		
Lead....	151.39		
Gas....	183.33		
Wire, screws, and hardware....	47.19		
Hay....	65.57		
Leather....	42.21		
Tools, shovels, and files....	151.54		
Drawing-paper, tracing-cloth, and stationery....	45.80		
Blossburg coal	95.00		
Temporary office and enclosing wall....	803 29		
Amount carried forward,....	$55,435.34		

			Cash Payment.	True Cost.
Amount brought forward,.....		$55,435.34		
Castings and patterns.....		1,256.34		
Materials for dredge.....		901.02		
Cement.....		531 80		
Brick.....		130.00		
Lumber.....		359.20		
Rope, chain, and twine.....		224.65		
Safe.....		120.00		
Tar and roofing.....		88.40		
Hauling iron.....		82.14		
Use of engine.....		78.12		
Iron buckets.....		65.89		
Salt.....		55.50		
Carpenter work.....		38.25		
Gas fitting.....		35.75		
Soap.....		21.05		
Jack-screws.....		10.00		
Miscellaneous items.....		118.62		
			$59,551.57	
ADD—				
Coal used previously paid for.....		$10,915.88		
DEDUCT—				
Coal sold.....	$ 151.07			
Hydrants and stop-cocks sold,	605.00			
Labor.....	529.71			
Hydrants, stop-cocks and labor used for, and charged to, extension, repairs, and other water accounts....	28,440.73			
Stock on hand in excess of April 1, 1866.....	4,531.71			
		34,258.22		
		$23,342.34		$36,209.2
IMPROVEMENTS AT RESERVOIRS.				
Labor at West Reservoir.....		$179.25		
Trees " "		90.00		
Hose and couplings.....		19.75		
Filling at South Reservoir.....		115.50		
			404.50	
ADD—				
Labor at shop.....		$190.67		595.1
REPAIRS OF PIPES, HYDRANTS, STOP-COCKS, AND MISCELLANEOUS OPERATING EXPENSES.				
Labor.....		$14,152.76		
Hydrant Inspectors and Water Police....		4,647.12		
Amounts carried forward,....		$18,799.88	$59,956.07	$36,804.4

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$18,799.88	$59,956.07	$36,804.40
Lumber.....	1,201.78		
Making and repairing boxes.....	623.75		
Pipe.....	339.84		
Branches, sleeves, caps, tapers, and bends,	454.47		
Nails and spikes.....	172.75		
Brick.....	179.59		
Horse-keeping.....	277.59		
Repairing pipe.....	125.88		
New wagon.....	215.00		
Repairing wagons.....	32.57		
Repairing tools.....	67.37		
Wheelbarrows and tools.....	309.53		
Repairing harness.....	20.00		
Lead.....	468.13		
Cement.....	32.90		
Repaving.....	115.05		
Drain pipe.....	70.00		
Commissioner's expenses to New York...	112 44		
Stone.....	116.04		
Coal.....	93.18		
Car fares.....	115.08		
Horse-shoeing.....	50.26		
Express charges on bonds	81.28		
Wood.....	22.00		
Salt.....	32.10		
Rent of stable lot.....	43.26		
Use of carriage.....	19.00		
Damage to carriage.....	30.00		
Receiving delegates from other cities.....	57.08		
Horse blankets.....	24.00		
Photographs of buildings.....	40.00		
Maps of Chicago.....	17.50		
Setting glass.....	40.50		
Miscellaneous items.....	56.42		
		24,456.22	
ADD—			
Hydrants used.....	$5,350.00		
Labor at inlet.....	847.24		
Watching inlet, tunnel, and engine-house	693.00		
Stop-cocks used.....	185.00		
Labor at shop.....	118.84		
Hydrant wrenches.....	36.05		
Amounts carried forward,....	$7,230.13	$84,412.29	$36,804.40

			Cash Payment.	True C
Amounts brought forward,....		$7,280.13	$84,412.29	$36,8
Depreciation in meters.....		2,892.00		
" " tools.....		55.74		
		$10,177.87		
DEDUCT—				
Received for shutting off and letting on water.....	$339.80			
Labor.....	446.44			
Costs on taxes.....	35.00			
Boots sold Sewerage Dep't....	30.00			
Express charges on bonds refunded.....	11.75			
		862.99		
		$9,314.88		33,7
WATER METERS.				
25 meters.....		$3,047.50		
Repairing, setting, and connecting.....		76.78		
Machinist.....		999.96		
Freight.....		195.98		
36 meter bottoms, and freight on same...		328.10		
Two horses.....		355.00		
Horse-keeping.....		133.46		
Rubber cover, coat, and cap.....		26.50		
Castings.....		129.26		
Materials and labor furnished by Walworth, Buschick & Co.....		725.90		
Carpenter work.....		42.00		
Labor.....		152.00		
Harness and repairs.....		90.50		
Repairing wagon.....		19.20		
Cement.....		13.99		
Tools.....		17.80		
Miscellaneous items.....		3.05		
			6,356.98	
DEDUCT—				
Valuation of meters charged stock....		$3,047.50		
Horse and tools charged stock.....		334.28		
Received for setting meters.....		272.55		
Dial sold		5.00		
		$3,659.33		
ADD—				
Labor at shop.....		26.86		
		$3,632.47		2,72
Amounts carried forward,.....			$90,769.27	$73,30

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$90,769.27	$73,300.01
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners.....	$3,000.00		
Salary of Secretary.....	933.32		
Salary of City Engineer.....	1,500.00		
Salaries of Superintendent and one Asst. Engineer.....	1,400.00		
Salaries of Clerks	5,391.16		
Water Assessors and Collectors.....	6,481.97		
Draughtsmen.....	225.00		
Printing, including Fifth Annual Report,	827.31		
Blank books and stationery.....	622.10		
Water-rate books.....	116.00		
Labor.....	526.47		
Furniture, carpeting, and mats.....	479.78		
Locks and keys, and repairing same.....	25.51		
Repairs at old and new offices.....	97.26		
Newspapers and books.....	34.33		
Revenue stamps.....	74.99		
Car fares.....	30.00		
Drawing-paper and materials.....	164.91		
Coal.....	59.21		
Ice.....	8.07		
Office rent.....	371.10		
Messenger, Janitor, and Watchman.....	211.25		
Advertising.....	516.76		
Gas fitting and fixtures.....	123.41		
Signs and painting.....	96.17		
Maps of Chicago.....	59.14		
Cleansing rooms and washing towels.....	27.16		
Gas.....	15.31		
Moving safe.....	13.33		
Repairing Assessor's harness	6.00		
Miscellaneous.....	131.22		
		23,568.24	
DEDUCT—			
Advertising.....	$203.96		
Maps sold.....	17.50		
	$221.46		23,346.78
Total operating expenses.....		$114,337.51	$96,646,79

WATER LOAN INTEREST.

		Cash Payment.	*True Cost.*
Interest on Water Loan Bonds, July 1, 1866, and January 1, 1867	$114,475.00		
Commissions to Duncan, Sherman & Co.,	261.90		
Interest on mortgage on Engine-House lot,	2,100.00		
Interest on temporary loans	986.29		
Premium on New York drafts	26.94		
		$117,850.13	
DEDUCT—			
Accrued interest on mortgage	$192.50		
One per cent. on mortgage on Engine-House lot	300.00		
	$492.50		
ADD—			
Amount transferred from Discount	3,493.12		
	$3,000.62		$120,850.75
INCOME.			
Taxes overpaid, refunded		75.26	75.26
BILLS PAYABLE.			
Paid Merchants' Savings, Loan & Trust Co., temporary loan		30,000.00	30,000.00
STOCK.			
Wagon	$66.66		
Kettle	12.00		
		78.66	
ADD—			
Valuation of meters furnished	$3,047.50		
Horse	175.00		
Meter tools	159.28		
	$3,381.78		
DEDUCT—			
Depreciation of meters $2,892.00			
" " tools 55.74			
	2,947.74		
	$434.04		512.70
COAL.			
Coal purchased not used		7,762.79	7,762.79
WATER-PIPES.			
Pipe purchased and not used		12,666.78	12,666.78
SERVICE-COCKS.			
Services of Tappers	$1,513.50		
Service-cocks purchased	3,854.50		
Amounts carried forward,	$5,368.00	$168,433.62	$171,868.26

			Cash Payment.	*True Cost.*
Amounts brought forward,....		$5,368.00	$168,433.62	$171,868.28
Cast-iron boxes.....		2,578.36		
Horse-keeping.....		122.31		
Horse-shoeing.....		23.56		
Wrenches.....		13.25		
Repairing and painting wagon.....		226.48		
Harness.....		45.00		
Repairing harness....		7.05		
Spikes.....		61.75		
Permit Clerk.....		112.50		
Rubber clothing.....		32.00		
Permit books and printing.....		77.25		
Solder.....		4.00		
Miscellaneous items.....		16.83		
			8,688.34	
ADD—				
Service-cocks previously paid for.....		$927.98		
Labor at shop.....		96.26		
		$9,712.58		
Cash receipts for Tapping.....$10,188.60				
Service-cocks sold.....	33.40			
Service-cocks on hand April 1, 1867.....	459.36			
Profit on Service-Cock acct....		968.78		
	$10,681.36	$10,681.36		
Total miscellaneous.....			$177,121.96	$171,868.28
Total additions to Water Works brought forward (not including New Engine and Buildings)....			212,774.83	642,921.82
Total expenditures for New Engine, New Engine-House, New Tower, and New Inlet, brought forward.....			164,779.94	170,521.27
Total operating expenses brought forward.....			114,337.51	96,646.79
			$669,014.24	$1,081,958.16
Total cash expenditures.....				$669,014.24
Deduct from True Cost column.....				$1,081,958.16
Amount of cost of Lake Tunnel previous to April 1, 1866.....$339,528.94				
Amount of cost of New Well Chamber previous to April 1, 1866.....		3,959.95		
				343,488.89
Total true cost for the year ending April 1, 1867.....				$738,469.27

SEWERAGE DEPARTMENT.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC WORKS, MARCH 31st, 1867.

	Dr.	*Cr.*
Sewers, North Division,	$325,751.27	
Sewers, South Division,	459,124.68	
Sewers, West Division,	560,922.65	
Haley Slough,	72.14	
S. Lind, Treasurer of Sewerage Commissioners	93,845.48	
Sewerage Loan Bonds, six per cent.,		$87,000.
Sewerage Loan Bonds, seven per cent.,		1,274,000.
W. Kimball, Comptroller, sewerage account,	2,000.00	
Sewerage Loan Bonds Canceled,		139,000.
Sewerage Sinking Fund,		47,206.
Sewerage Sinking Fund Mortgage,	5,867.10	
Discount on Sewerage Loan Bonds,	19,266.71	
Sewerage Loan Interest,		114,804.
Busch & Brand,		626.
Trustees Chicago Theological Seminary,		1,200.
Sewerage Pipes,	9,347.86	
Sewerage Stock,	3,856.72	
American Exchange National Bank,	132,608.50	
House Drains,	4,405.61	
Dennis Coughlin,	1,561.51	
Galena & Chicago Union Railroad Co.,		382.
Sewerage Fund in hands of City Treasurer,	31,251.68	
East ½ Lot 3, Block 4, Kinzie's Addition,	68.50	
South ½ Lot 5, Block 123, School Section,	22.18	
Z. Cobb, Agent, So. 80, W. ½ Lot 7, Block 36, O. T.	31.53	
Pittsburgh, Ft. Wayne & Chicago Railway Co.,		616.
Chicago, Burlington & Quincy Railway Co.,		6,744.
Owners of Lots 1, 2, 7 and 8, J. R. Storr's Addition,	94.54	
Wabash Avenue Drains,	350.54	
Cement Account,	157.86	
Sewerage Sinking Fund in hands of City Treasurer,	902.47	
Sewerage Man Hole and Catch Basin Covers,	1,765.80	
Sewerage Expenses and Repairs,	16,357.61	
West Madison Street Drains,	110.66	
Wells Street Drains,	198.96	
Washington Street Drains,	8.05	
La Salle Street Drains,	456.32	
Duffy & McNichols,	67.50	
Griswold and Sherman Street Drains,	574.50	
Filling North Market Street,	534.48	
	$1,671,582.91	$1,671,582.9

SEWERAGE FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1st, 1866, to March 31st, 1867, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds of 144 seven per cent. bonds sold, including interest	$145,453.33	
Received from City account of Sewerage Tax, 1866	157,123.52	
House drain permits issued	18,432.70	
R. I. Tinkham & Co., settlement of deposit account	10,000.00	
Constructing drains	9,638.20	
J. W. Cochrane's mortgage and interest	3,061.25	
Trustees Chicago Theological Seminary	1,200.00	
Materials sold	4,410.22	
Advertising	414.44	
John Duffy, failure to execute contract in 1863	200.00	
Labor for private parties	110.90	
Freight refunded	22.42	
	$350,066.98	
Balance in hands of City Treasurer April 1st, 1866	97,643.83	
		$447,710.81

EXPENDITURES.

	Cash Payment.	*True Cost.*
SEWERS—SOUTH DIVISION.		
Services of Engineers	$2,108.87	
Draughtsman	100 00	
Rodmen	597.37	
Labor	6,238.61	
Brick	2,900.61	
Cement	1,508.01	
Lumber	207.07	
Tape measure, wheelbarrows and tools	54.96	
Repairing tools	19.76	
Horse keeping	86.48	
Car fares, (engineers and rodmen)	61.25	
Rent of stable lot	12.00	
Drawing paper	21.00	
Amount carried forward,	$13,915.99	

		Cash Payment.	True (
Amount brought forward,. ...	$13,915.99		
Map covers and backs.....	20.92		
Field Books.....	14.47		
Desk and table.....	10.85		
Miscellaneous.....	19.53		
		$13,981.76	
ADD—			
Covers used..... $1,604.00			
Pipe used..... 3,168.85			
Depreciation in tools..... 120.00			
Expense sewer on Indiana av. 8,302.66			
" " State st.... 8,896.35			
" " 26th st.... 12,077.87			
" " Stewart av 2,689.47			
" " 21st st..... 3,142.64			
" " Wabash av 2,760.64			
" " McGregor st 5,375.58			
" " Prairie av. 3,925.40			
" " Archer R'd 3,204.78			
" " Purple st.. 698.68			
" " Michg'n av 4,667.16			
	$60,434.08		
DEDUCT—			
Cement used by Water and Street Departments..... $406.25			
Labor for private parties..... 88.00			
John Duffy, failure to execute contract..... 66.66			
	555.91		
	$59,878.17		$73,8
SEWERS—WEST DIVISION.			
Services of Engineers.....	$1,310.87		
Draughtsman.....	100.01		
Rodmen	592.68		
Labor.....	16,069.21		
Cement.....	1,606.51		
Brick.....	2,172.92		
Lumber.....	252.47		
Tape measures, wheelbarrows and tools..	44.70		
Repairing tools.....	19.76		
Rent of stable lot.....	10.42		
Car fares for engineers and rodmen.....	82.38		
Horse keeping.....	86.50		
Field Books.....	14.48		
Amounts carried forward,....	$22,362.91	$13,981.76	$73,8

			Cash Payment.	*True Cost.*
Amounts brought forward,....		$22,362.91	$18,981.76	$73,859.93
Drawing paper.....		21.00		
Map covers and binding.....		20.92		
Repairing instruments.....		17.50		
Desk and table.....		10.85		
Use of carriage.....		10.00		
Miscellaneous.....		29.34		
			22,472.52	
ADD—				
Covers used.....	$1,798.00			
Pipe used.....	5,133.50			
Depreciation in tools.....	100.00			
Expense sewer on W. Indiana st	10,966.14			
" " V. Buren st	16,792.26			
" " W. Wash. st	18,285.31			
" " W. Jack'n st	178.23			
" " Chicago av	2,613.07			
" " Green st..	728.67			
" " Morgan st.	3,804.74			
" " Carpenter st	1,228.23			
" " W. Taylor st	16,841.67			
" " Lincoln st.	1,266.97			
" " Reuben st.	748.50			
" " Wood st...	1,071.94			
" " Peoria st..	703.00			
" " W. Polk st.	12,900.52			
" " May st....	1,119.45			
" " Sangamon st	803.56			
		97,083.76		
DEDUCT—				
Brick used by Water Department.....	$155.33			
John Duffy, failure to execute contract.....	66.67			
		222.00		
		$96,861.76		119,334.28
SEWERS—NORTH DIVISION.				
Services of Engineers.....		$1,326.08		
Labor.....		4,732.23		
Rodmen.....		435.99		
Stone at North Clark street outlet.....		484.00		
Labor at " "		322.25		
New abutment " "		68.00		
Use of tug " "		6.00		
Brick.....		356.67		
Amounts carried forward,....		$7,781.22	$36,454.28	$193,194.21

			Cash Payment.	Trus
Amounts brought forward,....		$7,731.22	$36,454.28	$198
Cement.....		444.49		
Pipe sewer, 100 feet 9-inch.....		79.00		
Horse keeping.....		86.47		
Lumber.....		207.08		
Tape measures, wheelbarrows and tools..		43.70		
Repairing tools.....		19.75		
Car fares for engineers and rodmen.....		23.50		
Desk and table.....		10.85		
Map covers and backs.....		20.91		
Repairing instruments.....		17.50		
Draughtsman.....		99.99		
Drawing paper.....		21.00		
Use of carriage.....		10.00		
Field Books.....		14.47		
Miscellaneous.....		19.38		
			8,849.31	
ADD—				
Covers used.....	$595.00			
Pipe used.....	2,225.52			
Depreciation in tools.....	80.00			
Expense sewer on Division st.	3,336.46			
" " N. Clark st.	6,749.81			
" " White st...	1,212.52			
" " Oak st....	643.48			
" " Chesnut st.	332.30			
" " North av..	8,534,14			
		$23,709.23		
DEDUCT—				
Brick used by Water Dep't...	$121.55			
John Duffy, failure to execute contract.....	66.67			
		188.22		
		$23,521.01		32

CLEANSING SEWERS—SOUTH DIVISION.

Labor.....		$10,210.72		
Water used for flushing.....		288.09		
Damage by sewer overflowing.....		100.00		
Rubber boots and oil clothing.....		27.25		
Repairing tools.....		112.38		
Pipe, coupling and scoops.....		22.01		
Rope and oakum.....		18.30		
Lumber.....		30.26		
Oil and candles.....		19.40		
Amounts carried forward,.....		$10,828.41	$45,303.59	$225

		Cash Payment.	*True Cost.*
Amounts brought forward,	$10,828.41	$45,303.59	$225,564.53
Plumbing	8.31		
Car fares	8.50		
		10,845.22	
DEDUCT—			
Labor charged contractors	$267.75		
ADD—			
Depreciation in tools	184.00		
	$83.75		10,761.47
CLEANSING SEWERS—WEST DIVISION.			
Labor	$6,572.25		
Water used for flushing	142.56		
Rubber boots and oil clothing	44.25		
Repairing tools	123.66		
Pipe couplings and scoops	22.01		
Rope and oakum	30.81		
Lumber	30.26		
Oil and candles	18.41		
		6,984.21	
ADD—			
Depreciation in tools	$157.67		7,141.88
CLEANSING SEWERS—NORTH DIVISION.			
Labor	$9,852.96		
Water used for flushing	430.05		
Rubber boots and oil clothing	27.25		
Repairing tools	111.86		
Pipe, coupling and scoops	22.00		
Rope and oakum	18.29		
Lumber	30.26		
Oil and candles	11.14		
		10,503.81	
ADD—			
Depreciation in tools	$133.00		
DEDUCT—			
Labor charged contractors	95.00		
	$38.00		10,541.81
REPAIRS OF SEWERS—SOUTH DIVISION.			
Labor	$1,801.11		
Cement	75.61		
Brick	320.91		
Lumber	30.26		
Repairing tools	23.07		
Moving shop	16.67		
Repaving	3.50		
		2,271.13	
Amounts carried forward,		$75,907.96	$254,009.69

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$75,907.96	$254,009.69
ADD—			
Covers used..... $1,290.00			
Pipe used..... 27.60			
Depreciation in tools..... 40.00			
	$1,357.60		
DEDUCT—			
Labor charged contractors.....	18.00		
	$1,339.60		8,610.78
REPAIRS OF SEWERS—WEST DIVISION.			
Labor.....	$1,390.24		
Cement.....	34.63		
Brick.....	203.00		
Lumber.....	30.26		
Repairing tools.....	26.94		
Moving shop.....	16.67		
Acid.....	3.40		
Car fare.....	9.50		
		1,714.64	
ADD—			
Covers used.....	$665.00		
Depreciation in tools.....	40.00		
	$705.00		2,419.64
REPAIRS OF SEWERS—NORTH DIVISION.			
Labor.....	$1,115.20		
Cement.....	111.78		
Relaying drain corner of Division street.	125.00		
Relaying walk " " "	20.45		
Lumber.....	30.26		
Repairing tools.....	20.93		
Moving shop.....	16.66		
		1,440.28	
ADD—			
Covers used.....	$283.00		
Depreciation in tools.....	20.00		
	$303.00		1,743.28
HOUSE DRAINS.			
Services of draughtsmen.....	$1,116.67		
Inspecting.....	2,793.00		
Permit clerk.....	112.50		
Setting junctions.....	213.11		
Advertising.....	656.49		
Permit and Record Books and notices...	155.25		
Amounts carried forward,....	$5,047.02	$79,062.88	$261,783.34

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$5,047.02	$79,062.88	$261,783.34
Desk and table.....	32.55		
Repairing gas pipe.....	36.04		
Car fares for inspectors.....	71.60		
Cement.....	10.00		
Permit refunded.....	4.00		
		5,201.21	
DEDUCT—			
Received for permits issued.....	$18,432.70		
" " advertising.....	210.48		
	$18,643.18		
ADD—			
Pipe junctions used.....	3,169.07		
	$15,474.11		
Net profits in cash.....$10,272.90			
MAN HOLE AND CATCH BASIN COVERS.			
Labor.....	$2,524.36		
Lumber.....	2,353.73		
Nails and spikes.....	704.22		
Tar.....	126.00		
Moving shop.....	50.00		
Twine.....	12.30		
		5,770.61	
DEDUCT—			
Covers used for sewers and repairs.....$6,235.00			
Covers sold and labor..... 89.82			
	$6,324.82		
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners	$3,000.00		
Salary of Secretary.....	933.32		
" City Engineer.....	1,500.00		
" Sup't and Ass't Engineer.....	1,400.00		
" Clerks.....	4,582.54		
Car fares	25.90		
Draughtsman.....	100.00		
Blank books and stationery.....	384.66		
Advertising.....	239.89		
Printing, including 5th annual report....	219.05		
Revenue stamps.....	75.01		
Office rent.....	371.11		
Messenger, janitor and watchman.....	137.00		
Papers and books.....	34.33		
Amounts carried forward,....	$13,002.81	$90,034.70	$261,783.34

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$13,002.81	$90,034.70	$261,783.34
Furniture, carpeting and mats.....	492.25		
Repairing at old and new offices.....	69.48		
Express on bonds.....	92.00		
Rent of stable lot.....	20.84		
Signs and painting.....	101.34		
Coal.....	59.22		
Ice.....	8.07		
Drawing materials.....	186.47		
Maps, mounting and binding.....	48.64		
Commissioner's expenses to New York...	110.45		
Receiving delegations from other cities...	57.08		
Locks and keys and repairs.....	22.01		
Gas fixtures and fitting.....	117.80		
Gas at office.....	15.31		
Cleaning office and washing towels.....	13.17		
Moving safe.....	13.34		
Miscellaneous.....	121.02		
		14,551.80	
DEDUCT—			
Amount received for advertising.....	$203.96		14,347.34
SEWERAGE INTEREST.			
Interest on Sewerage Loan Bonds July 1, 1866, and January 1, 1867.....	$89,850.00		
Commission to American Exchange National Bank.....	224.62		
Premium on New York drafts.....	23.57		
		90,098.19	
DEDUCT—			
Accrued interest on bonds sold.....	$1,610.83		
			88,487.36
SEWERAGE STOCK.			
Tools and chain.....	$ 586.57		
Wagons and carts.....	1,002.17		
Harnesses.....	68.00		
Sheeting.....	113.40		
		1,770.14	1,770.14
SEWERAGE PIPE.			
Pipe purchased.....	$19,000.82		
Labor.....	349.75		
Advertising.....	17.43		
		19,368.00	
DEDUCT—			
Pipe charged sewers and repairs.....	$13,724.54		
Pipe sold.....	1,351.95		
	$15,076.49		4,291.51
Amounts carried forward,.....		$215,822.33	$370,679.69

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$215,822.33	$370,679.69
SEWERAGE BRICK.			
Brick purchased.....	$1,976.25		
Labor and advertising.....	208.25		
		2,184.50	
(Brick all used by Water Department, and cost refunded.)			
WEST WASHINGTON STREET SEWER. 2,669 FT., AND 1,332 FT. 3 FT., 3½ FT.			
W. Woodruff, constructing sewer.....	$7,166.39		
" extra allowance by Council,	1,035.50		
Mulany & Duffy, constructing sewer....	4,329.00		
" " extra labor and materials,	66.25		
Brick.....	4,948.67		
Labor.....	440.50		
Inspector.....	232.00		
Rodman.....	61.00		
Tape measure.....	6.00		
		18,285.31	
WEST JACKSON STREET SEWER.			
Brick.....	$163.23		
Labor.....	15.00		
		178.23	
WEST INDIANA STREET SEWER. 2,338 FT., 4 FT. SEWER.			
W. Woodruff, constructing sewer.....	$5,574.12		
" extra allowance by Council	958.80		
Brick.....	4,120.72		
Inspectors.....	190.00		
Labor.....	122.50		
		10,966.14	
DIVISION STREET SEWER. 760 FEET, 2 FEET SEWER.			
Langan & McHugh, constructing sewer..	$1,713.25		
" " extra allowance by Council.....	640.30		
Brick.....	797.91		
Inspector.....	90.00		
		3,241.46	
NORTH CLARK STREET SEWER. 742 FT., 5 FT., AND 160 FT., 5 FT. WING.			
Langan & McHugh, constructing sewer..	$2,411.50		
" " " wing sewer	520.00		
" " extra labor and material.....	117.50		
Langan & McHugh, extra allowance by Council.....	897.38		
Amounts carried forward,....	$3,946.38	$250,677.97	$370,679.69

		Cash Payment.	*True Cost,*
Amounts brought forward,....	$3,946.38	$250,677.97	$370,679.69
Brick.....	2,351.93		
Labor.....	308.50		
Inspector.....	128.00		
Rodmen.....	15.00		
		6,749.81	
INDIANA AVENUE SEWER. 1,330 FT., 2½ FT., AND 1,327 FT., 2 FT. SEWER.			
Gladding & Fuller, constructing sewer...	$5,846.30		
" " extra labor and materials.....	922.38		
Brick.....	845.23		
Taking up and relaying railroad track...	475.50		
Inspectors.....	124.00		
Labor.....	45.00		
		8,258.41	
VAN BUREN STREET SEWER. 2,665 FT., 4½ FT. SEWER.			
W. Woodruff, constructing sewer...	$9,365.18		
" extra allowance.....	1,511.85		
Brick.....	5,524.98		
Labor.....	228.25		
Inspector.....	162.00		
		16,792.26	
STATE STREET SEWER. 1,248 FT., 5 FT. SEWER.			
Gladding & Fuller, constructing sewer...	$4,555.20		
" " 15 per cent. reserved in 1865.....	751.17		
Gladding & Fuller, extra labor & materials	30.75		
Brick.....	3,220.98		
Inspector.....	156.00		
Labor.....	117.25		
Rodmen.....	65.00		
		8,896.35	
WHITE STREET SEWER. 813 FT., 2 FT. SEWER.			
McCabe, Ryan & Co., constructing sewer.	$674.79		
" " extra labor and material.....	20.25		
Brick.....	457.98		
Labor.....	32.50		
Inspector.....	27.00		
		1,212.52	
CHESTNUT STREET SEWER.			
Brick.....	$286.30		
Inspector, $27; labor, $19.....	46.00		
		332.30	
Amounts carried forward,.....		$292,919.62	$370,679.69

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$292,919.62	$370,679.69
OAK STREET SEWER.			
McCabe, Ryan & Co., on account of contract.....	$120.59		
Brick.....	440.94		
Labor.....	32.50		
Inspector.....	27.00		
Plumbing.....	22.45		
		643.48	
TWENTY-SIXTH STREET SEWER. 1,334 FT., 4 FT. AND 897 FT., 3 FT. SEWER.			
Gladding & Fuller, constructing sewer...	$9,257.50		
" " extra labor and materials.....	139.62		
Brick	1,971.75		
Inspector.....	314.00		
Labor	227.00		
		11,909.87	
CHICAGO AVENUE SEWER. 555 FT., 4 FT. SEWER.			
Beaty & Farrell, constructing sewer.....	$2,109.00		
" " extra labor and materials	7.06		
Brick.....	428.01		
Inspector.....	60.00		
Labor.....	9.00		
		2,613.07	
GREEN STREET SEWER. 443 FT., 2 FT. SEWER.			
Beaty & Farrell, constructing sewer.....	$451.86		
" " extra labor and materials	16.75		
Brick.....	210.06		
Inspector.....	50.00		
		728.67	
MORGAN STREET SEWER. 1,056 FT., 2 FT. SEWER.			
Beaty & Farrell, constructing sewer.....	$1,592.10		
Mulany & Duffy, on account.....	1,018.26		
Brick	970.55		
Inspector.....	201.33		
Labor.....	22.50		
		3,804.74	
STEWART AVENUE SEWER. 427 FT., 3 FT. AND 371 FT., 2 FT. SEWER.			
Mulany & Duffy, constructing sewer.....	$1,781.85		
" " extra labor and materials	27.19		
Brick	769.18		
Inspector.....	56.00		
Labor.....	55.25		
		2,689.47	
Amounts carried forward,.....		$315,308.92	$370,679.69

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$315,308.92	$370,679.69
TWENTY-FIRST STREET SEWER. 1,298 FT., 2½ FT. AND 100 FT., 2 FT. SEWER.			
Mulany & Duffy, constructing sewer.....	$1,942.20		
" " extra labor and materials	19.44		
Brick.....	1,032.97		
Inspecting, $78; labor, $25.....	103.00		
Plumbing.....	45.03		
		3,142.64	
CARPENTER STREET SEWER. 462 FT., 2 FT. SEWER.			
Beaty & Farrell, constructing sewer.....	$965.58		
" " extra labor and materials	11.25		
Brick.....	197.40		
Inspector.....	54.00		
		1,228.23	
TAYLOR STREET SEWER. 2,085 FT., 5 FT. SEWER.			
Langan & McHugh, constructing sewer..	$6,476.50		
Brick.....	8,754.62		
Labor.....	1,302.60		
Inspector.....	289.00		
Plumbing.....	18.95		
		16,841.67	
LINCOLN STREET SEWER. 651 FT., 2 FT. SEWER.			
Mulany & Duffy, constructing sewer.....	$1,041.60		
" " extra labor.....	5.25		
Brick.....	130.95		
Inspector.....	66.67		
Labor.....	22.50		
		1,266.97	
REUBEN STREET SEWER. 229 FT., 2 FT. SEWER.			
Mulany & Duffy, constructing sewer.....	$572.50		
Brick.....	120.00		
Inspector.....	56.00		
		748.50	
WOOD STREET SEWER. 385 FT., 2 FT. SEWER.			
Beaty & Farrell, constructing sewer.....	$770.00		
Brick.....	80.00		
Labor.....	177.94		
Inspector.....	44.00		
		1,071.94	
PEORIA STREET SEWER. 443 FT., 2 FT. SEWER.			
Beaty & Farrell, constructing sewer.....	$434.14		
" " extra labor and materials	16.75		
Amounts carried forward,.....	$450.89	$339,608.87	$370,679.69

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$450.89	$339,608.87	$370,679.69
Brick.....	175.11		
Inspector.....	50.00		
Labor.....	27.00		
		703.00	
WABASH AVENUE SEWER. 668 FT., 2½ FT. AND 665 FT., 2 FT. SEWER.			
Duffy & McNichols, constructing sewer..	$2,187.05		
" " extra labor and materials...	120.12		
Brick.....	275.97		
Inspector.....	100.00		
Labor.....	77.50		
		2,760.64	
NORTH AVENUE SEWER. 1,667 FT., 4½ FT. SEWER.			
McCabe, Ryan & Co., constructing sewer.	$4,417.55		
" " extra labor and materials.....	47.87		
Brick.....	3,636.12		
Inspector.....	295.00		
Labor.....	62.25		
Plumbing.....	75.35		
		8,534.14	
McGREGOR STREET SEWER. 970 FT., 4½ FT. SEWER.			
Duffy & McNichols, constructing sewer..	$3,298.00		
" " extra labor and materials.....	43.12		
Brick.....	1,285.40		
Labor.....	563.56		
Inspector.....	118.00		
Cement.....	67.50		
		5,375.58	
PRAIRIE AVENUE SEWER. 668 FT., 2½ FT. AND 17 FT., 2 FT. SEWER.			
Duffy & McNichols, constructing sewer..	$1,732.30		
" " extra labor and materials.....	68.04		
Gladding & Fuller, 15 per cent. reserved in 1865.....	1,027.35		
Brick.....	846 50		
Inspecting.....	142.00		
Labor.....	87.75		
		3,903.94	
Amounts carried forward,.....		$360,886.17	$370,679.69

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$360,886.17	$370,679.69
ARCHER ROAD SEWER. 1,134 Ft., 2 Ft. SEWER.			
Mulany & Duffy, constructing sewer.....	$1,417.50		
" " extra labor and materials	156.87		
Labor.....	772.38		
Brick.....	541.90		
Inspector.....	50.00		
Cement.....	40.00		
Plumbing.....	26.13		
		3,004.78	
POLK STREET SEWER. 2,058 Ft., 4 Ft. SEWER.			
W. Woodruff, constructing sewer.....	$7,781.50		
Brick.....	4,182.37		
Labor.....	720.65		
Inspector.....	216.00		
		12,900.52	
MAY STREET SEWER. 406 Ft., 2 Ft. SEWER.			
Beaty & Farrell, constructing sewer.....	$913.50		
" " extra labor.....	7.25		
Brick.....	117.70		
Inspector.....	54.00		
Labor.....	27.00		
		1,119.45	
PURPLE STREET SEWER. 332 Ft., 2 Ft. SEWER.			
Mulany & Duffy, constructing sewer.....	$408.36		
Brick.....	210.07		
Labor.....	55.25		
Inspector.....	25.00		
		698 68	
SANGAMON STREET SEWER.			
Labor.....		803.56	
MICHIGAN AVENUE SEWER. 665 Ft., 2½ Ft., 628 Ft., 2 Ft. SEWER.			
Gladding & Fuller, constructing sewer...	$2,887.10		
" " extra labor and materials.....	179.50		
Gladding & Fuller, 15 per cent. reserved in 1865.....	215.28		
Brick.....	1,022.38		
Labor.....	276.90		
Inspector.....	86.00		
		4,667.16	
GRISWOLD AND SHERMAN STREETS DRAINS.			
Whalon & Hallinin, constructing drains..		574.50	574.50
Amounts carried forward,.....		$384,654.82	$371,254.19

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$384,654.82	$371,254.19
WABASH AVENUE DRAINS.			
W. M. Dee, constructing drains.....		2,611.75	
DEDUCT—			
Received on account of drains constructed in 1865 and 1866.....	$2,722.46		
WEST MADISON STREET DRAINS.			
Whalon & Hallinin, constructing drains..		824.62	
DEDUCT—			
Received for constructing drains.....	$713.96		110.66
VAN BUREN STREET DRAINS, WEST OF STATE STREET.			
Langan & McHugh, constructing drains, (all refunded).....		1,624.05	
VAN BUREN STREET DRAINS, EAST OF STATE STREET.			
W. Woodruff, constructing drains, (all refunded).....		150.97	
WELLS STREET DRAINS.			
Langan & McHugh, constructing drains..		2,580.96	
DEDUCT—			
Refunded on account of drains.....	$2,332.00		198.96
WASHINGTON STREET DRAINS.			
Sherwood & Duffy, constructing drains...		83.30	
DEDUCT—			
Refunded on account of drains.....	$75.25		8.05
LA SALLE STREET DRAINS.			
W. Woodruff, constructing drains.....		1,371.10	
DEDUCT—			
Refunded on account of Drains.....	$914.78		456.32
CANAL STREET DRAINS.			
John Duffy, constructing drains, (all refunded)		411.19	
WEST RANDOLPH STREET DRAINS.			
Whalon & Hallinin, constructing drains, (all refunded,)....		628.04	
FILLING NORTH MARKET STREET.			
Stewart, Ludlam & Co., on account contract for filling....		534.48	534.48
SINKING FUND.			
Amount paid to Sinking Fund for its proportion of Sewerage Tax for 1865....		21,033.85	21,033.85
Total cash expenditures.....		$416,459.13	$393,596.51
Balance in hands of City Treasurer, April 1st, 1867.		31,251.68	
		$447,710.81	

SEWERAGE SINKING FUND.

RECEIPTS.

Proportion of Sewerage Tax of 1865,.....	$21,033.85	
Balance in hands of City Treasurer, April 1st, 1866,..	711.12	
		$21,744.97

EXPENDITURES.

Twenty-one Bonds purchased and cancelled, Nos. 1415 to 1435, inclusive, 7 per cent.....	$20,842,50	
Balance in hands of City Treasurer, April 1, 1867....	902.47	
		$21,744.97

RIVER IMPROVEMENT DEPARTMENT.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC WORKS, MARCH 31st, 1867.

	Dr.	*Cr.*
River Improvement Fund in hands of Treasurer,...	$5,394.10	
Expenses of Survey previous to adoption of plan...	1,269.23	
American Exchange National Bank.....	8,365.00	
Expenses of Canal Survey.....	13,389.17	
River Improvement Salary Account.....	12,750.00	
River Improvement Office Expenses.....	1,383.01	
Sanger, Steel & Co., Contractors.....	62,292.59	
Fox, Howard & Walker, Contractors.....	34,569.45	
River Improvement Bonds, 7 per cent.....		$163,000.00
Discount on River Improvement Bonds.....	8,330.89	
River Improvement Interest.....		119.13
Miscellaneous Expenses	15,375.69	
	$163,119.13	$163,119.13

RIVER IMPROVEMENT FUND.

STATEMENT of the Cash Receipts by the Board of Public Work from April 1, 1866, to March 31, 1867, inclusive, and detaile statement of the cost of the various operations conducted b the Board during the same time:

RECEIPTS.

Proceeds of 70 River Improvement Bonds sold, including accrued interest	$70,142.49	
Balance in hands of City Treasurer, April 1, 1866	64,413.86	
		$134,556.3

EXPENDITURES.

		Cash Payment.	*True Cost.*
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners	$6,000.00		
Advertising	67.75		
Office Rent	140.00		
Blank books, stationery and bond record book	54.05		
Express on bonds	80.00		
Coal	18.00		
Miscellaneous	3.90		
		$6,363.70	$6,363.7(
EXPENSES OF SURVEY.			
Engineers	$3,300.00		
Rodmen	1,786.51		
Labor	40.00		
Examining route	110.50		
Right of way	62.50		
Use of horse	43.00		
Boat	25.00		
Wood	17.57		
Lumber	6.50		
Tools and miscellaneous items	36.88		
		$5,428.46	$5,428.46
INTEREST.			
Amount of coupons due July 1st, 1866, and January 1st, 1867	$8,365.00		
Commissions to American Exchange National Bank	20.92		
Amounts carried forward,	$8,385.92	$11,792.16	$11,792.16

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$8,385.92	$11,792.16	$11,792.16
Premium on New York draft.....	2.44		
		8,388.36	
DEDUCT—			
Accrued interest.....	$142.49		8,245.87
MISCELLANEOUS.			
Sanger, Steel & Co., on account of contract	$59,036.59		
Fox, Howard & Walker, " " "	34,569.45		
Pumping at Bridgeport.....	3,398.80		
Trustees Ill. & Mich. Canal, dredging....	2,950.40		
" " " " tolls lost.....	8,642.99		
" " " " labor on summit level.....	335.50		
Advertising notice to contractors.....	48.00		
		108,981.73	108,981.73
Total cash expenditures.....		$129,162.25	$129,019.76
Balance in hand of Treasurer, April 1st, 1867.....		5,394.10	
		$134,556.35	

WASHINGTON STREET TUNNEL.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC WORKS, MARCH 31st, 1867.

	DR.	CR.
Washington St. Tunnel Fund in hands of Treasurer,	$5,460.51	
Bonds, (Municipal,)		$25,000.00
Discount on Bonds	281.14	
Miscellaneous expenses	3,622.65	
Stewart, Ludlam & Co	15,635.70	
	$25,000.00	$25,000.00

TUNNEL FUND.

STATEMENT showing the cash receipts and detailed account of work done under the charge of the Board of Public Works during the year ending March 31st, 1867.

RECEIPTS.

Proceeds of 25 Municipal Bonds,.....	$24,718.86

EXPENDITURES.

		Cash Payment	*True Cost.*
STEWART, LUDLAM & CO.			
Paid them on account of contract..... ..		$15,635.70	$15,635.70
MISCELLANEOUS EXPENDITURES.			
Services of engineer.....	$916.65		
Rodman.....	310.00		
Relaying water-pipe.....	301.44		
Planking roadway.....	518.25		
Lumber.....	1,140.19		
Advertising.....	73.12		
Printing specifications.....	36.50		
Nails and spikes.....	86.75		
Tape measure and scale.....	15.00		
Drawing paper.....	12.00		
Making plans.....	169.00		
Express on bonds.....	18.75		
Coal.....	7.00		
Table and chairs.....	18.00		
		3,622.65	3,622.65
Total cash expenditures.....		$19,258.35	$19,258.35
Balance in hand of Treasurer April 1st, 1867.....		5,460.51	
		$24,718.86	

CITY DEPARTMENT.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC WORKS, MARCH 31st, 1867.

	Dr.	*Cr.*
City Appropriation Fund, (Amount unexpended,)..	$102,647.99	
North Division	2,728.69	
South Division	11,038.14	
West Division	14,239.57	
North Division Sidewalks		$1,777.94
South Division Sidewalks		1,033.85
West Division Sidewalks	1,612.44	
Dredging Goose Island		3,797.77
Lake Park		9,475.50
Jefferson Park		279.04
Union Park		3,424.96
Lincoln Park		2,570.29
Dearborn Park		2,094.13
Washington Park	288,95	
Public Parks		718.04
Lake Hospital		1,771.31
Street Lamps—West Division		55.73
Washington Street Tunnel	245.00	
Public Buildings		12,098.40
Chicago Cemetery		4,656.38
Sidewalks west side of Cemetery		156.29
City Office Expenses	14,830.23	
Dredging Main River and South Branch		10,000.00
Dredging North Branch		6,698.83
Chicago Harbor		11,755.29
Intersections of Streets		34,270.73
North Market	1,519.48	
Straightening North Clark Street		50.00
Stone Account	116.04	
Dredging Bar at Mouth of Harbor	47,227.49	
Special Appropriations		70,849.05
North Pier Extension	38,440.53	
City Proportional Expense Account		1,366.77
House Numbers		1,412.87
Bridge Department		1,086.26
Twelfth Street Bridge		30,000.00
Amounts carried forward,	$234,934.55	$211,348.94

	Dr.	*Cr.*
Amounts brought forward,.....	$234,934.55	$211,348.94
hteenth Street Bridge.....		15,000.00
cago Avenue Bridge.....		22,000.00
k Line Survey.....	13,414.39	
	$248,348.94	$248,348.94

BOARD OF PUBLIC WORKS APPROPRIATION FUND.

STATEMENT of the Cash Receipts by the Board of Public Works from April 1st, 1866, to March 31st, 1867, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Amount Appropriated by Common Council	$419,042.06	
Amount of Loans for Bridges at Clark and Fuller Streets and North Avenue	28,582.29	
Permits issued	1,026.25	
Sexton's labor in Chicago Cemetery	384.50	
Sand sold from Cemetery	2,350.85	
Received for House Numbers	2,653.50	
Damages to Bridges	130.00	
Lamp Posts	43.50	
Received from Special Assessments for expenses	355.59	
Re-paving streets and repairing walks	457.10	
Received for work for Fire Department	526.43	
Received for Licenses and Scale Permits	75.75	
Received for labor for private parties	123.61	
Subscription for constructing bridge at Halsted Street	3,000.00	
Paving Rush Street at and near bridge approach	1,611.50	
Rent of Lots	114.00	
Stone Sold	44.50	
Lumber Sold	25.04	
Advertising	24.00	
Broken Lamp posts	8.00	
	$460,578.49	
Balance in hands of City Treasurer, April 1st, 1866	30,862.97	
		$491,441.46

EXPENDITURES.

	Cash Payment.	*True Cost.*
NORTH DIVISION.		
Labor on streets and walks	$21,716.23	
Sidewalk Inspectors	1,884.62	
Amount carried forward,	$23,600.85	

		Cash Payment.	*True Cost.*
Amount brought forward,.....	$28,600.85		
Special Constable.....	300.00		
Engineers and rodmen.....	1,217.31		
Lumber.....	4,177.86		
Stone and gravel.....	1,042.45		
Nails and Spikes.....	423.95		
Constructing walk on Green Bay and Elm streets	157.05		
Tools.....	76.60		
Street Signs.....	38.00		
Lettering street lamps.....	107.90		
Car fares.....	24.00		
Maps of Chicago.....	6.66		
		31,172.63	
ADD—			
Sand had from cemetery.....	$22.50		
DEDUCT—			
Amount received for permits issued.....$342.02			
Labor for Fire Department..... 49.90			
Lumber..... 25.04			
Walk..... 10.00			
	426.96		
	$404.46		30,768.17
SOUTH DIVISION.			
Labor on streets and walks.....	$39,656.94		
Sidewalk Inspectors.....	2,802.74		
Lumber.....	4,240.84		
Stone and gravel.....	3,281.78		
Tools.....	265.74		
Repairing tools.....	149.64		
Sprinkling front of Dearborn Park.....	184.00		
Special Constable.....	300.00		
Nails and spikes.....	770.70		
Grading streets.....	2,417.50		
Nineteen barrels composition.....	133.00		
Street signs.....	38.00		
Engineers and rodmen.....	1,268.34		
Relaying flagging on Wabash Avenue...	259.95		
Curb-wall corner Randolph and Wells sts.	60.00		
Rent of lumber lot.....	96.00		
Constructing fence at Bridewell.....	64.89		
Filling for streets.....	70.00		
Lettering street lamps.....	131.16		
Amounts carried forward,.....	$56,191.22	$31,172.63	$30,768.17

		Cash Payment.	*Trus Co*
Amounts brought forward,.....	$56,191.22	$31,172.68	$30,76
Freight on street sweeping machine.....	112.80		
Damages opening an alley.....	26.66		
Car fares.....	38.50		
Maps of Chicago.....	6.67		
		56,375.85	
ADD—			
Stone used, previously paid for.....	$822.63		
DEDUCT—			
Permits issued.....$342.25			
Labor for Fire Department..... 451.41			
Repaving..... 193.00			
Repairing walks..... 120.00			
Fence at Bridewell..... 64.89			
Stone and gravel..... 44.50			
Lamp post..... 30.00			
———	1,246.05		
	$423.42		55,952
WEST DIVISION.			
Labor on streets and walks.....	$41,795.99		
Sidewalk Inspectors.....	2,823.75		
Special Constable.....	300.00		
Engineers and rodmen.....	1,335.35		
Lumber.....	11,352.03		
Stone and gravel.....	3,083.68		
Tools.....	219.62		
Repairing tools..... ..	159.10		
Nails and spikes.....	1,847.40		
Street signs.....	307.00		
Lettering street lamps.....	200.94		
Car fares.....	24.00		
Rent of stable lot.....	32.82		
Towing to Mud Lake.....	90.00		
Setting lamp post.....	8.50		
Maps of Chicago.....	6.67		
		63,586.85	
ADD—			
Lumber used, previously paid for.....	$442.80		
DEDUCT—			
Permits issued.....$341.98			
Paid by town of Cicero for culvert 25.36			
———	367.34		
	$75.46		63,662
Amounts carried forward,.....		$151,135.33	$150,382

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$151,135.33	$150,382.91
CHICAGO CEMETERY.			
Labor	$2,566.50		
Labor on fence	263.24		
Lumber and Nails for fence	374.78		
Tools	25.18		
Inspector	225.00		
Sand and gravel tickets	5.00		
Four straps	4.00		
		3,463.70	
DEDUCT—			
Amount received for Sand sold	$2,350.85		
Sand charged North Division	22.50		
Sexton's returns	374.50		
	$2,747.85		715.85
SIDEWALKS WEST SIDE OF CHICAGO CEMETERY.			
Filling walk	$207.50		
Constructing 391 feet walk	136.85		
		344.35	344.35
STONE ACCOUNT.			
Stone purchased, not used		116.04	116.04
PUBLIC BUILDINGS.			
COURT HOUSE AND SQUARE.			
Plastering	$142.00		
Calsomining	126.00		
Labor on gate	96.50		
Repairing roof and dome	74.75		
Glazing	41.42		
Plumbing	41.35		
Labor in square	30.00		
Painting cupola	21.88		
Repairs.	14.25		
Gas fitting	6.50		
		594.65	594.65
BRIDEWELL.			
Constructing walk and railing	$384.25		
Constructing fence	215.00		
Plumbing	19.75		
Six wheelbarrows	18.00		
Nails	14.00		
Glazing	9.05		
Hardware	5.07		
		665.12	665.12
Amounts carried forward,		$156,319.19	$152,818.92

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$156,319.19	$153,818.9
ARMORY.			
Painting Police Court Room.....	$393.25		
Covering roof.....	353.00		
Glazing.....	27.73		
Plumbing.....	10.48		
Repairs.....	2.55		
		787.01	787.01
CITY HOSPITAL.			
Painting.....	$755.25		
Plumbing.....	52.65		
		807.90	807.9
NORTH MARKET.			
Lumber.....	$216.60		
Repairs.....	101.00		
Gutter pipe.....	21.50		
Painting.....	33.25		
Glazing.....	8.80		
Nails.....	7.25		
Carpenter work.....	23.36		
		411.76	
DEDUCT—			
Labor for Police Department.....	25.12		386.6
LAKE HOSPITAL.			
Lightning rods on Hospital.....		100.00	100.0
BRIDGE DEPARTMENT.			
Carpenter work.....	$8,762.48		
Nails and spikes.....	603.19		
Driving piles and use of scow.....	1,428.50		
Lumber.....	1,756.94		
Lard oil and kerosene.....	517.83		
Blacksmith work.....	187.66		
Lamps, lanterns, chimneys and wicks.....	607.51		
Horse keeping.....	173.48		
Castings.....	101.49		
Piles.....	430.02		
Coal.....	390.50		
Filling approach at North Halsted street bridge.....	404.25		
Machine work at Water Works shop in 1865.....	354.01		
Tug, E. Van Dalson, new pilot house.....	130.00		
Chain.....	23.92		
Amounts carried forward,....	$15,871.73	$158,425.86	$154,900.4

		Cash Payment.	*True Cost.*
Amounts brought forward....	$15,871.73	$158,425.86	$154,900.47
Wagon	66.67		
Pump and blocks	40.02		
Rent of stable lot	10.41		
Lignumvitæ plates	22.50		
Draughtsman	36.00		
Oakum and rope	95.23		
Drawing paper	12.00		
Pails and brooms	24.50		
Iron	17.76		
Hardware and miscellaneous items	60.20		
		16,257.02	16,257.02
RUSH STREET BRIDGE.			
Tending Bridge	$1,930.00		
Lumber	279.70		
Cutting and trimming stone	34.25		
Bolts, screws and locks	12.48		
Coal	11.00		
Painting	57.50		
		2,324.93	2,324,93
STATE STREET BRIDGE.			
Tending bridge	$1,742.00		
Lumber	254.32		
Nails	7.75		
Coal	10.50		
One bar iron	12.98		
Gas fitting and repairs	14.78		
		2,042.33	2,042.33
CLARK STREET BRIDGE.			
T. Mackin, constructing bridge	$13,800.00		
" extra castings and labor	462.00		
Tending bridge	1,720.00		
Lumber	204.75		
Painting	135.75		
Castings	36.01		
Rope	32.88		
Brace-blocks	38.35		
Stove-pipe	2.20		
		16,431.94	16,431.94
WELLS STREET BRIDGE.			
Tending bridge	$1,720.00		
Castings and machine work	204.04		
Lumber	26.00		
Stove-pipe	1.80		
		1,951.84	1,951.84
Amounts carried forward,		$197,433.92	$193,908.53

		Cash Payment.	*True Cost*
Amounts brought forward,.....		$197,433.92	$193,906
LAKE STREET BRIDGE.			
Tending bridge.....	$1,670.00		
Lumber.....	380.86		
		2,050.86	2,050.
RANDOLPH STREET BRIDGE.			
Tending bridge.....	$1,580.00		
Lumber.....	3.93		
Connecting service-pipe.....	96.45		
Repairing bridge-house.....	36.87		
Coal.....	21.50		
Blacksmith work.....	13.73		
Axe and nails.....	3.80		
		1,756.28	
DEDUCT—			
Received from bark American Union, for damages.....	$100.00		1,656.2
MADISON STREET BRIDGE.			
Tending bridge.....	$1,480.00		
Blacksmith work.....	389.33		
Carpenter work.....	59.50		
Lumber.....	531.39		
Nails and spikes.....	77.15		
Repairing gas-pipe.....	20.25		
Painting bridge.....	249.00		
Coal.....	5.00		
		2,811.62	2,811.6
VAN BUREN STREET BRIDGE.			
Tending bridge.....	$1,480.00		
Setting lamp-posts.....	17.00		
Lumber.....	11.00		
Coal.....	10.50		
		1,518.50	1,518.5
POLK STREET BRIDGE.			
Tending bridge.....	$1,420.00		
Rope and chain.....	85.47		
Shovel, hatchet and lantern.....	7.75		
Stove and pipe.....	12.65		
Lumber.....	14.20		
Castings and machine work.....	44.22		
		1,584.29	
DEDUCT—			
Amount received for damages.....	$30.00		1,554.2
Amounts carried forward,.....		$207,155.47	$203,500.

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$207,155.47	$203,500.08
TWELFTH STREET BRIDGE.			
Tending bridge.....	$1,420.00		
Lumber.....	59.58		
Making plans.....	30.00		
Chain, tools and lanterns.....	22.10		
Stove and pipe.....	15.65		
		1,547.33	1,547.33
EIGHTEENTH STREET BRIDGE.			
Tending bridge..... .	$1,420.00		
Repairing bridge.....	462.86		
Towing bridge to and from dry-dock.....	85.00		
Chain, rope and lock.....	57.68		
Stove	14.00		
Lumber.....	60.85		
		2,100.39	2,100.39
HALSTED STREET BRIDGE.			
Tending bridge.....	$1,220.00		
Painting bridge.....	325.00		
Lumber.....	17.07		
Lock and stove-pipe.....	4.15		
		1,566.22	1,566.22
ARCHER ROAD BRIDGE.			
Tending Bridge.....	$520.00		
Lumber, rope and wrench..... ..	9.24		
		529.24	529.24
FULLER STREET BRIDGE.			
Tending bridge.....		350.00	350.00
REUBEN STREET BRIDGE.			
Tending bridge....		210.00	210.00
KINZIE STREET BRIDGE.			
Tending bridge.....	$1,370.00		
Painting bridge.....	300.00		
Lumber.....	24.40		
Coal.....	7.50		
		1,701.90	1,701.90
INDIANA STREET BRIDGE.			
Tending bridge.....	$1,260.00		
Lumber.....	24.00		
Lamp post and setting.....	29.00		
Chain, oar and stove pipe....	31.65		
		1,344.65	1,344.65
Amounts carried forward,..... ...		$216,505.20	$212,849.81

		Cash Payment.	*True Cost.*
Amounts brought forward,....		$216,505.20	$212,849.81
ERIE STREET BRIDGE.			
Tending bridge.....	$1,220.00		
Chain, rope, oar and stove pipe.....	54.65		
Painting and plastering bridge house.....	8.00		
		1,282.65	1,282.65
CHICAGO AVENUE BRIDGE.			
Tending bridge.....	$1,220.00		
Chain.....	78.43		
Making plan.....	30.00		
Lumber.....	23.70		
		1,347.13	
DEDUCT—			
Damages to lamp post.....	$8.00		1,339.13
NORTH AVENUE BRIDGE.			
Tending bridge.....	$750.00		
Lantern, lock, ring and stove-pipe.....	10.70		
		760.70	760.70
CLYBOURNE AVENUE BRIDGE.			
Tending bridge.....	$520.00		
Shovel.....	2.00		
		522.00	522.00
NORTH HALSTED STREET BRIDGE.			
Fox & Howard, constructing bridge.....	$6,500.00		
Tending bridge.....	175.00		
		6,675.00	
DEDUCT—			
Amount subscribed for new bridge.....	$3,000.00		3,675.00
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners.....	$3,000.00		
Salary of Secretary.....	916.66		
Salary of City Engineer.....	1,500.00		
Salaries of Superintendent and Assistant Engineer on streets.....	1,400.00		
Salaries of Bookkeepers and Clerks.....	5,203 64		
Salaries of Assistant Engineers.....	2,660.58		
Salaries of Draughtsmen.....	2,320.52		
Stationery and blank-books.....	396.82		
Printing, including 5th Annual Report...	528.04		
Coal.....	59.17		
Papers and books.....	31.99		
Repairs at old and new offices.....	98.80		
Revenue stamps.....	125.00		
Furniture, carpeting and mats.....	419.32		
Amounts carried forward,....	$18,660.54	$227,092.68	$220,429.29

		Cash Payment.	*True Cost*
Amounts brought forward,	$18,660.54	$227,092.68	$220,429.29
Advertising	2,697.94		
Commissioners' oaths	20.25		
Drawing materials	161.04		
Commissioners' expenses to New York	110.45		
Office Rent	371.09		
Maps, and mounting and binding same	116.32		
Messenger, janitor and watchman	137.00		
Hauling lamp-posts	151.50		
Filling pond near Grand Haven Slips	62.00		
Lamp posts	25.05		
Moving safe	13.33		
Signs and painting	113.67		
Gas-fitting	90.05		
Repairing furniture	74.37		
Car fares	45.40		
Repairing surveying instruments	58.00		
Locks and keys and repairing same	22.00		
Gas at office	15.29		
Insurance	18.00		
Washing towels and cleaning office	15.25		
Ice	8.06		
Receiving delegations from other cities	57.09		
Miscellaneous items	132.66		
		23,176.85	
DEDUCT—			
Special assessment expenses	$355.59		
Rent of sundry lots	114.00		
License and scale permits	75.75		
Lamp post and advertising	37.50		
Engineering and inspecting	33.36		
	$616.20		22,560.15
HOUSE NUMBERS.			
Draughtsman	$746.15		
Serving notices	900.00		
Giving numbers	225.00		
Printing notices, receipts and certificates	129.50		
Car fares	14.65		
		2,015.30	
Received for numbers	$2,653.50		
Net profits	638.20		
CHICAGO HARBOR.			
Salary of Harbor Master	$1,200.00		
Removing wrecks and obstructions	531.00		
Amounts carried forward,	$1,731.00	$252,284.83	$242,989.44

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$1,731.00	$252,284.33	$242,969.44
Dredging and use of dredge.	1,369.44		
Constructing dock at Washington street..	560.00		
Constructing dock near Randolph street..	184.54		
Repairing dock at Fulton street.....	313.90		
Carpenter work.....	223.00		
Sounding	127.50		
Constructing dock at McGregor street....	632.00		
Dredging Ogden Slip.....	1,190.20		
Labor at Ogden Slip by city laborers.....	722.85		
Tending light on pier	145.08		
Light-house, oil and wicking.....	27.84		
Labor on pier.....	82.00		
Draughtsman.....	86.00		
Placing buoy on wreck and stone block for same.....	32.90		
Lumber.....	8.82		
Office rent, horse keeping and miscellaneous items.....	467.72		
		7,854.79	7,854.79
LINCOLN PARK.			
Swain Nelson, balance of contract.....	$10,739.82		
Nelson & Benson, on account of contract	2,037.88		
Labor on walks and drives.....	1,468.48		
Lumber and repairs on fence.....	60 50		
Superintendent.....	350.00		
Engineer.....	108.00		
Interest on back payments.....	118.98		
		14,883.66	14,883.66
JEFFERSON PARK.			
Labor.....	$1,196.94		
Cinders and ashes.....	115.50		
Gravel.....	545.63		
Grass seed.....	6.25		
		1,864.32	1,864.32
UNION PARK.			
D. Cromby, balance of contract.....	$3,655.90		
Superintendent.....	582.31		
Labor.....	467.25		
Labor on sewer.....	1,165.50		
Sodding edges of drives.....	25.00		
Gravel.....	31.00		
Removing stone.....	438.30		
		6,366.26	6,366.26
Amounts carried forward,.....		$283,253.36	$273,958.47

		Cash Payment.	*True Cost.*
Amounts brought forward,....		**$283,253.36**	**$273,958.47**
LAKE PARK.			
Labor	$390.00		
Making plan	10.00		
Lumber	10.00		
		410.00	410.00
DEARBORN PARK.			
Labor	$692.72		
Gravel	395.50		
Trees and shrubs	224.40		
Wheelbarrows	6.00		
Ashes	14.25		
Grass seed	7.00		
		1,339.87	1,339.87
WASHINGTON PARK.			
Trees	$445.75		
Labor	43.20		
		488.95	488.95
PUBLIC PARKS.			
One mowing machine and freight on same		108.75	108.75
DOCK LINE SURVEY.			
Engineers	$2,746.95		
Rodmen	4,243.56		
Use of tug inspecting line	84.00		
Draughtsmen	1,795.15		
Drawing materials	84.25		
Nails, tools, car fares and miscellaneous items	211.20		
Removing lumber line	30.00		
		9,195.11	9,195.11
DREDGING NORTH BRANCH.			
Fox & Howard, on account of dredging	$8,204.18		
Inspecting	97.50		
		8,301.68	8,301.68
STREET LAMPS—WEST DIVISION.			
Setting posts on Fulton and Randolph streets and St. John's Place		133.37	133.37
INTERSECTIONS OF STREETS.			
Paving intersections of Wabash avenue	$19,086.53		
Paving " West Randolph st.	17,671.22		
Paving " West Madison st.	7,214.88		
Paving " South Water st.	1,905.80		
Paving " Wells st., Lake st. to Bridge	1,569.70		
Amounts carried forward,....	**$47,448.13**	**$303,231.09**	**$293,936.20**

		Cash Payment.	*True Cost.*
Amounts brought forward,....	$47,448.13	$303,231.09	$293,956.2[illegible]
Paving intersection of V. Buren st., State to Michigan ave.	235.60		
Paving " V. Buren st., State st. to river.....	7,567.90		
Paving " S. Wells st., Van Buren to Taylor street.....	3,000.00		
Paving " Washington st...	1,000.00		
Paving " Rush and North Water sts.....	3,247.00		
Filling " Erie & La Salle sts.	63.82		
Filling " La Salle & Adams streets.....	79.50		
Macadamizing " Canal st.....	1,741.50		
Macadamizing " Twefth and Polk streets..	125.50		
Graveling " Michigan avenue.	1,696.63		
Graveling " Prairie avenue...	1,830.79		
Graveling " Sixteenth st.....	1,627.57		
Graveling " La Salle st. and Court Place....	21.75		
Graveling " North Clark st...	125.00		
Planking " Lumber street....	587.81		
Abatement for viaduct on North Wells st.	3,903.90		
Inspecting..	25.96		
Setting curb-stone.....	226.73		
Raising sundry catch-basins.....	5,450.50		
Cement.....	869.97		
		80,875.56	
DEDUCT—			
J. Mattocks, for paving and wall at Rush street bridge.....	$1,611.50		79,264 06
SIDEWALKS—NORTH DIVISION.			
Sundry walks constructed.....		625.80	625.80
SIDEWALKS—SOUTH DIVISION.			
Sundry walks constructed.....		1,767.66	
DEDUCT—			
Amount paid by owner of lots.....	$42.50		1,725.16
SIDEWALKS—WEST DIVISION.			
Sundry walks constructed.....		2,293.36	
DEDUCT—			
Amount paid by owners of lots.....	$91.60		2,201.76
Total cash expenditures.....		$388,793.47	$377,752.98
Balance in Treasurer's hands, April 1, 1867.....		102,647.99	
		$491,441.46	

SEVENTH ANNUAL REPORT

OF THE

Board of Public Works

TO THE

COMMON COUNCIL

OF THE

CITY OF CHICAGO,

FOR THE

MUNICIPAL FISCAL YEAR ENDING MARCH 31st, 1868.

CHICAGO:
PRESS OF JAMESON & MORSE, 12 & 14 LA SALLE STREET.
1869.

VDDA

June 5, 1911,

SEVENTH ANNUAL REPORT

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1869.

Board of Public Works.

MEMBERS OF THE BOARD:

A. H. BURLEY, Commissioner and President.

JOHN McARTHUR, Commissioner and Treasurer.

W. H. CARTER, Commissioner.

WILLIAM GOODING, } Members acting only in matters pertaining to Cleansing Chicago River.
ROSWELL B. MASON, }

OFFICERS:

A. W. TINKHAM, Secretary.

E. S. CHESBROUGH, City Engineer.

COMMISSIONERS' REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, October 1st, 1868.

To the Mayor and Aldermen of the City of Chicago, in Common Council assembled:

The Board of Public Works submit herewith to the Common Council their report for the municipal fiscal year ending March 31st, 1868.

At the commencement of the year the Board was organized anew, consisting of Commissioners Gindele, Burley and McArthur. At the close of the calendar year Commissioner Gindele resigned, and Commissioner Carter was appointed by your honorable body to succeed him.

The Board report on the various interests entrusted to their charge in the order usually followed in previous reports.

WATER WORKS.

LAKE TUNNEL.

The Lake Tunnel, which was already in successful operation at the beginning of the year, has since continued to perform its functions without interruption. Although the clearness of the water has been at times slightly affected by storms, and the temperature of the lake in midsummer was higher than was anticipated, the uniform good quality of the water has been a subject

of general congratulation with the citizens. Perhaps this may account, in part, for the extraordinary increase in the amount of water required for the supply of the city over that for previous years. The average daily consumption of the previous year was 8,681,536 gallons; of the present—the one to which this report applies—11,560,730 gallons. The total amount supplied during the previous year was 3,168,760,609 gallons, and during the present 4,231,791,659 gallons.

The increase, about 33 per cent., is so great as to show that very soon the consumption will reach what the engines may be safely relied on to supply. The aggregate maximum capacity of these engines has been estimated at a daily supply of 38,000,000 gallons. But it is safe to rely upon the engines for only a portion of their aggregate power. It cannot be considered an excessive precaution to require that the maximum pumping capacity shall be at least double that required for ordinary use. Other cities, at vast expense, construct reservoirs in their midst and store up water for emergencies. The city of Chicago has the water at its door, but it must store up the power by which it is to be elevated. The consumption is unequal at different times, so that while the power may be abundant for ordinary use, it may at times be insufficient from some extraordinary cause, as in the case of fire; and the machinery is, moreover, liable to accidents and derangement. The pumping power of the Water Works of this city ought, hence, to be always largely in excess of what is necessary for the average use of the water. The continually increasing consumption shows that it is time already to prepare for additional engines. The growth of the pumping department of the Water Works must keep pace with the extension of the pipes and with the growth of the city.

ENLARGED WORKS.

Extensive and important additions and improvements to the works were made during the year.

During the year the engine room of the new pumping works was finished. For commodiousness and beauty, it has few equals. The finished works, it is believed, will compare favorably with any in our country.

The gate-chamber—a circular room or well of masonry connected on the lake side with the main tunnel and a short branch tunnel, and on the opposite side by tunnels with the various pumping wells of the new works—was finished, with its connections with the north and the old or central pump well.

The new engines were finished and put in operation the earlier part of the year, and have since been in use, working efficiently and satisfactorily.

The new machine shop of the Water Works, a substantial and good sized two story brick building, was finished and occupied. Here are constructed and repaired all the hydrants and stop-cocks in use on the works. Most of the miscellaneous work of wood and iron is also done here. The shop is not only a great convenience, but is also a source of economy.

WATER PIPES LAID.

A large amount of distributing water pipes was laid, as follows:

In the South Division	25,488 feet.
" " West "	76,142 "
" " North "	26,889 "
Total	128,519 feet,

or $24\frac{34}{100}$ miles, (about what constituted the total amount of water pipes in the original plan of the Chicago Water Works in 1852.)

These additions make the total amount of water pipes laid in the city 179 miles 2,071 feet.

The supply in the northwest part of the city has been much improved by the extension of the sixteen inch main on Chicago Avenue, between Union and Carpenter Streets.

FIRE HYDRANTS.

One hundred and twenty-nine were added during the year, making the total number in connection with the works nine hundred and nineteen.

TAPPING OF THE WATER PIPES.

The number of taps inserted was larger than in any previous year. The numbers and sizes being as follows, viz:

1 inch	107
¾ "	225
⅝ "	818
½ "	3,231
Total	4,381

WATER RENTS.

Deducting $96.16 for water tax refunded, the total amount collected was	$337,371.77
The profits of tapping the pipes amounted to	1,557.51
Total income for year ending March 31st, 1868	$338,929.28

A considerable portion of the water rents is obtained from meter rates.

The city, at the close of the year reported on, had on hand 275 Meters, 91 of which were added during the year. All are the Worthington Water Meters.

Their various sizes and corresponding numbers are shown in the statement below.

⅝ inch Meters on hand	38
1 " " "	94
1½ " " "	30
2 " " "	69
3 " " "	41
4 " " "	3
Total number of Meters on hand	275

Of the total number on hand, 253 were in use at the close of the year.

The total supply to the city during the year, for all purposes, amounted to 4,231,791,659 gallons. About one-tenth of the whole amount, or 409,167,500 gallons, was measured and paid for by meters yielding an average revenue of 17 cents per thousand gallons, and a total as shown below.

Meter rates, South Division	$29,737.00
" West "	28,605.00
" North "	11,686.00
Total water tax, determined by Meters, for year	$70,028.00

WORKING EXPENSES AND NET REVENUE.

Expenses at the Pumping Works (including some portion of the previous year's expenses)	59,236.22
Expenses connected with Lake Tunnel and Crib	4,825.36
Repairs of Pipes, Hydrants, &c., and miscellaneous operating expenses	33,660.71
Water Meters, current expenses, repairs, depreciation, &c.	4,107.31
Salaries of Board and Officers, office rent, and all salaries and expenses pertaining to the Water Office, and the assessment and collection of water rents	27,530.04
Interest on Bonds and temporary loans, including $3,737.74 transferred from discount account	155,228.25
Total interest and operating expenses	$284,587.89
Income from Water Rents, as stated above	$338,929.28
Deduct interest and expenses	284,587.89
Net revenue	$54,341.39

COST OF ADDITIONS TO THE WORKS DURING THE YEAR.

$24\frac{34}{100}$ miles of Water Pipes	$246,420.53
Temporary connection with Lake Tunnel	993.08
New Engines, expenditures during the year	29,317.59
New Pumping Well, South side of Engine House	5,562.40
Gate Chamber and connection	7,283.35
New Tower	53,088.94
New Engine House	74,391.48
New Machine Shop	19,934.32
	$436,991.69

COST OF THE WORKS, APRIL 1st, 1868.

Cost of the Water Works, including all expenditures on works in progress, March 31st, 1868,	$2,810,911.49

HOW PAID FOR.

Water Loan Bonds, 6 per cent., $1,030,000, deducting for discount, $46,637.46	$983,362.54
Water Loan Bonds, 7 per cent	1,515,000.00
Amount used from water rents	312,548.95
Total	$2,810,911.49

Sewerage Works.

A greater length of sewers was laid than in any previous year. The totals of all sizes are stated below.

In the South Division,	23,044 feet, costing		$92,760.75
" West "	48,592 " "		239,964.30
" North "	18,045 " "		84,005.46
Total	89,681 feet, costing		$416,730.51

Total length of Sewers laid in the city, $101\frac{1170}{5280}$ miles.

SEWER CLEANING.

There was expended in cleaning the Sewers and Catch Basins during the year $26,540.81

SEWER REPAIRS.

The repairs of Sewers and Catch Basins, and the renewal and repairs of Manhole Covers during the year, cost $9,596.42

PRIVATE DRAINS.

Permits for connecting buildings by drains with the sewers were issued as follows, viz:

In the South Division		1419
" West "		1250
" North "		1034
Total		3703

EXPENSES, REPAIRS, AND INTEREST.

Interest on Sewerage Loan Bonds and temporary loans	$107,954.91
Sinking Fund, amount set aside, tax of 1866	23,301.90
Salaries, office rent, and office and miscellaneous expenses	17,039,89
Repairs and cleaning of sewers as above	36,137.23
Total cost for the year	$184,433.93

SEWERAGE LOAN BONDS.

Six per cent. Bonds outstanding March 31st, 1868	$ 87,000
Seven " " " " "	1,612,000
Total Sewerage Bonds outstanding March 31, 1868	$1,699,000

Sewerage Sinking Fund.

The amount belonging to the fund was, at the close of the year, as follows, viz.:

Balance in hands of City Treasurer, March 31, 1868,	$ 4,114.65
Due from the sewerage tax of 1867	28,878.82
Mortgage due and unpaid	5,867.10
Total not yet applied to canceling of Sewerage Bonds,	$38,860.57

Sewerage Bonds to the amount of $21,000 were purchased and canceled during the year, making the total amount purchased and canceled at the close of the year $160,000.

Deepening of the Illinois and Michigan Canal.

May 1st, 1867, the Board received proposals anew for the entire work of deepening the Illinois and Michigan Canal. These proposals were for much higher prices than under the first contracts, and made the estimated cost of the work such that it was not deemed proper to accept them, except under authority from your honorable body. Reports informing the Council of the proposals received, and recommending that only a portion of the work be contracted for under certain of the bids rendered which seemed reasonable, were made by the Board at the time. Subsequently a part of the canal was again advertised, and contracts finally made for the work, excepting the summit sections Nos. 17 to 44 inclusive, as follows, viz.:

Sections 1–13, inclusive		Messrs. Fox, Howard & Walker.
" 14–16, "		" Hosch & Harroun.
" 45, 46, 47 and E. ½ 48	..	Mr. Charles E. Boyer.
" W. ½ 48 and all of 49	..	Messrs. C. B. Kimbell & Co.
" 51 and 52		" Hosch & Van Slyck.
" 54 and 55		Mr. Samuel W. Norton.
" 56, 57 and 59		Messrs. Lee & Graham.
" 62 and 63		" Jno. A. Henricks & Co.

As the contracts were let late in the season, the amount of dredging done was not large. It was, yet, quite as much as could be expected under the circumstances, and more than all that was done in other seasons preceding it.

Navigation was suspended on the canal from November 15th to April 1st. The progress made during the winter on the rock excavation was quite satisfactory. One third of the whole amount under contract was removed. The sections not under contract at

that time, and not embraced in those termed "rock sections," require, however, about 63,000 yards of rock excavation additional.

The work for the year was in amount as follows:

Earth excavation.....247,460 cubic yards.
Rock " 87,146 "

For the cleansing of the river, the Pumping Works at Bridgeport were employed as heretofore, pumping the water of the river into the canal, but to a greater extent than in other years.

Pumping was commenced about the middle of June, and with occasional interruption was continued until September. For this pumping the sum of $15,000 has been paid, leaving a balance to be settled hereafter.

During the winter, at the request of the Board, the Calumet feeder was discharged through the canal into the river. The turning of the waters of the feeder into the river, it was believed, would be beneficial in adding so much pure water to the volume of the river, and by creating more or less of an outward current, would prevent the accumulation of filth which ordinarily occurs. The result was that the river was kept in good condition through the winter, and was left comparatively clean in the spring.

Chicago Harbor.

The City has expended nothing at the entrance to the harbor. It is hoped that the works there in progress under the United States Government, and the Chicago Dock and Canal Company, will be found adequate to the protection and preservation of the channel.

The dredging on the North Branch of a channel extending from Indiana Street to near Waubansia Avenue, commenced in the previous season, was finished during the year now reported on. With this exception no large amount of work was done during the year.

The survey of the river and branches for the establishment of the dock lines from the mouth of the harbor to the limits of the city, as ordered by the Council, was finished during the year.

An important harbor regulation was brought into operation this year—the Common Council ordinance providing for the closing of the bridges for vehicles and pedestrians for ten minutes after they shall have been kept open, at any time, so long as ten minutes for the passage of vessels.

The ordinance was put in force June 10th, 1867, and has operated, it is believed, without injury to the interests of navigation, and very much to the accommodation of the general public.

Washington Street Tunnel.

At the opening of the year the contract with the original contractors, Messrs. Stewart, Ludlam & Co., was in force. But little progress was being made by them, and May 31st, 1867, the Board declared that by a failure to prosecute the work they had forfeited their contract, and ordered that proposals be again invited by public advertisement for the doing of the work by other contractors. Of the numerous proposals received, the bid of Messrs. J. K. Lake & Co. was accepted, and a contract executed with them July 20th, 1867, for the doing of the work for the sum of $328,500, and certain specified prices for any work not included in the specifications.

With the exception of the suspension of the masonry during the winter months, the construction of the tunnel progressed vigorously from the time that Messrs. Lake & Co. commenced work.

Street Work.

In April, 1867, a writ of injunction was served on the city by the United States District Court, at the instance of parties representing Samuel Nicolson, and restraining the city from laying a species of wooden block pavement termed the Nicolson patent. Previous to this a small amount of pavement, somewhat different from that termed the Nicolson patent, had been laid. This pavement omitted the particular features on which it was understood that the patent was claimed as an original invention, that is, the insertion of a strip or picket between the rows of blocks and the tarring of the floor boards on which the pavement rests. The favorable experience had with it, and a careful comparison of its merits with the so-called Nicolson patent, led to its adoption by the Board. Its principal difference consists in this: The Nicolson pavement half occupies the space between the rows of blocks with a three inch strip or picket, on top of which is filled three inches of composition of gravel and tar. The pavement in use by the Board has the whole of this space packed with a composition of gravel and tar. It is found that in much of the pavement heretofore laid the picket works up to the surface, forcing out the gravel, and leaving the blocks without support, and loose. So far as the experience of the Board goes, nothing of the kind occurs with the composition filling rammed in between the blocks, and they are found as firmly set now as when first laid. The new pavement is apparently a firmer and more lasting one than that termed the Nicolson.

In this year the experiment was first made of sweeping and cleaning the paved streets of the city by contract. September 23d, 1867, the work was awarded to Messrs. McDonald & Hamlen for the period ending March 31st, 1868.

The contractors have performed the work satisfactorily. The cleaning of the improved streets can doubtless be done more economically by contract than by day labor.

The statements given hereafter exhibit the large number of the street and alley improvements ordered by the Council, and the progress made in carrying out these orders.

STREET WORK.

Statement showing the Street Work done and ordered done from April 1, 1867, to April 1, 1868.

The following streets have been ordered curbed, filled, graded and paved:

SOUTH DIVISION.

STREET.	FROM	TO	REMARKS.
Indiana av.	16th st.	22d st.	Completed.
Clark st.	Polk st.	12th st.	Completed.
Wells st.	Lake st.	Randolph st.	Completed.
La Salle st.	Madison st.	Jackson st.	Completed.
Wabash av.	S. Water st.	Randolph st.	Completed.
Calhoun place.	Clark st.	Dearborn st.	
Indiana av.	22d st.	29th st.	
Michigan av.	Lake st.	S. Water st.	Completed.
Haddock place.	Block 16.		
Haddock place.	Block 19.		
Haddock place.	Block 18.		

The following streets and alleys have been ordered filled, graded and planked:

STREET.	FROM	TO	REMARKS.
Couch place.	W. 161 feet	Block 34 O. T.	Completed.
Alley.	14th to 16th st.	Bet. State st. and Wabash av.	Completed.
Alley.	Block 4	Frac. Sec. 15.	

The following streets have been ordered graded and Macadamized:

STREET.	FROM	TO	REMARKS.
S. Market st.	Madison st.	Van Buren st.	Completed.
Halsted st.	Archer road	31st st.	Completed.
Halsted st.	31st st.	Egan av.	Completed.

The following streets have been ordered filled and graveled:

STREETS.	FROM	TO	REMARKS.
Michigan av.	12th st.	22d st.	Completed.
Michigan av.	22d st.	29th st.	

The following street has been ordered filled, curbed and graded:

STREET.	FROM	TO	REMARKS.
Adams st.	Market st.	Michigan av.	

WEST DIVISION.

The following streets have been ordered curbed, filled, graded and paved with wooden block pavement:

STREETS.	FROM	TO	REMARKS.
Clinton st.	Madison st.	Lake st.	Completed.
Milwaukee av.	Desplaines st.	Elston road.	Completed.
S. Halsted st.	Harrison st.	Crossing C.B.Q.RR.	
Halsted st.	Lake st.	Harrison st.	Partly complet'd
Blue Island av.	Harrison st.	Twelfth st.	
N. Jefferson st.	Randolph st.	Fulton st.	Partly complet'd
W. Van Buren st.	Canal st.	Halsted st.	
Canal st.	W. Lake st.	W. Madison st.	Completed.

The following streets and alleys have been ordered filled, graded and planked:

STREETS.	FROM	TO	REMARKS.
Fisk st.	22d st.	Lumber st.	Completed.
Alley, block 1.	Canal Trus. Sub'n.	S. E. ¼ Sec. 17.	Completed.
W. 22d st.	Centre av.	Reuben st.	Completed.
W. 22d st.	Center av.	Morgan st.	Completed.

The following streets have been ordered graded and Macadamized:

STREETS.	FROM	TO	REMARKS.
Blue Island av.	12th st.	22d st.	
N. Jefferson st.	Fulton st.	Alley, Block 10 O.T.	Completed.

The following streets have been ordered filled and graded:

STREET.	FROM	TO	REMARKS.
W. Washington st.	Canal st.	Green st.	
Hoyne st.	W. Lake st.	Kinzie st.	
W. Twelfth st.	Throop st.	Loomis st.	Completed.
W. Adams st.	Halsted st.	Canal st.	

The following streets have been ordered cindered:

STREET.	FROM	TO	REMARKS.
Noble st.	Milwaukee av.	North av.	Completed.
North avenue	Noble st.	Elston road	Completed.
Elston road	North av.	Clybourne place	Completed.

NORTH DIVISION.

The following streets have been ordered curbed, filled, graded, and paved with wooden block pavement:

STREET.	FROM	TO	REMARKS.
N. State st.	Michigan st.	Chicago av.	
Kinzie st	N. Clark st.	Kinzie st. bridge	Completed.
Michigan st.	N. Clark st.	Kingsbury st.	
N. Clark st.	Chicago river	Chicago av.	Completed.
N. Clark st.	Chicago av.	Division st.	
N. Dearborn st.	Michigan st.	North av.	
N. Dearborn st.	Michigan st.	N. Water st.	
N. Clark st.	Division st.	North av.	

The following alleys have been ordered filled, graded, and planked:

STREET.	FROM	TO	REMARKS.
Alley	Block 6	Wolcott's addition	Completed
Alley	Block 15	Johnston, Roberts, & Storrs.	Completed
Alley	Block 10	Wolcott's addition	Completed

The following street has been ordered curbed, graded, and Macadamized:

STREET.	FROM	TO.	REMARKS.
Chicago av.	N. Clark st.	Chicago river	Partly complet'd

The following streets have been ordered filled:

STREET.	FROM	TO	REMARKS.
N. Market st.	Erie st.	Division st.	
Bremer st.	Chicago av.	Division st.	Completed.
Division st.	Clybourne av.	Larrabee st.	
Townsend st.	Chicago av.	White st.	

The following streets have been ordered graveled:

STREET.	FROM	TO	REMARKS.
N. Water st.	Rush st.	St. Clair st.	
Rush st.	Kinzie st.	Chicago av.	Completed.

Lamp Posts.

ORDERED BY COMMON COUNCIL DURING YEAR FROM APRIL 1st, 1867, TO APRIL 1st, 1868.

The following list shows the orders given by the Common Council during the past year, for the erection of lamp posts in the different divisions of the city, and also the progress that has been made in carrying out these orders:

SOUTH DIVISION.

WHERE ERECTED.	No. Posts.	REMARKS.
Cottage Grove av. bet. 26th st. and S. line University place.	45	Posts erected.
Wabash av., one at its intersection with 13th st. and one at intersection of 20th st., and 2 old posts removed to street corners.	2	Posts erected.
Hubbard Court bet. Wabash and Michigan avs.	2	
Sherman st. between Van Buren and Harrison sts.	6	Posts erected.
Griswold st. bet. Van Buren and Polk sts., and the post cor. Van Buren and Griswold sts. removed 35 feet W.	14	Posts erected.
Taylor st. intersection with Wells st.	2	Posts erected.
So. Water st., alley next E. Wabash av. and S. E. cor. Blk. 5, Fort Dearborn addition.	4	
Prairie av. bet. 22d and 23d sts.	3	Posts erected.
26th st. bet. Indiana and Calumet avs., and the post S. side 26th st., bet. Prairie and Calumet avs., removed to opposite side of street.	4	Posts erected.
31st st. bet. Wabash and Indiana avs.	8	Posts erected.
29th st. bet. Indiana and Calumet avs.	8	Posts erected.
State st. bet. 22d and 23d sts., and 1 post on 23d st 120 feet E. of State street.	6	
Wells st. bt. Taylor and Polk sts.	4	Posts erected
Wabash av. bet. 25th and 31st sts.	27	Posts erected.
Indiana av. bet. 29th and 31st sts.	11	Posts erected.
21st st. bet. State st. and Michigan av.	4	Posts erected.
Michigan av. bet. 29th and 31st sts.	9	Posts erected.
Indiana av. from 31st st. to a point about 900 ft. S.	8	Posts erected.
Alley, block 118, school section addition.	2	Posts erected.
Kankakee av. bet Cottage Grove av. and 29th st.	10	
Calumet av. from 22d st. to 24th st.	11	
Madison st. bt. La Salle st. and Clark st.	2	Posts erected.
Madison st. 100 feet E. of State st.	1	Post erected.
Calumet av. bet. 26th and 25th sts.	6	

SOUTH DIVISION.---Continued.

WHERE ERECTED.	No. Posts.	REMARKS.
lace from Cottage Grove av. to a point west	6	Posts erected.
ove av., University Place to Douglas Place.	3	Posts erected.
bet. Quincy st. and Van Buren st.	5	
m Wabash av. to State st.	2	
t. 12th and 14th sts.	9	
m Michigan av. 125 feet west.	1	
bt. Van Buren and Madison sts.	11	

WEST DIVISION.

t. bet. Lake st and Kinzie st.	9	Posts erected.
t. bet. Sangamon st. and Milwaukee av.	9	Posts erected.
st. bet. Lake st. and Kinzie st.	9	
ıren st. bet. Jefferson st. and Desplaines st.	2	Posts erected.
ngton st. bt. Lincoln st. and W. line st.	6	Posts erected.
ot. 12th st. and Dussold st., and one on st. 120 feet west of Union st.	3	Posts erected.
d Peoria sts., intersection of, one on N. and one on S. W. corner.	2	Posts erected.
bet. Harrison st. and 12th st	24	Posts erected.
ı st. bet. Fulton st. and Kinzie st.	6	
ngton st. bet. Leavitt st. and Robey st.	9	Posts erected.
bet. Van Buren st. and W. Jackson st.	3	Posts erected.
bet. Leavitt st. and Hoyne st.	5	Posts erected.
st. bet. W. Washington and Fulton sts.	1	Post erected.
e st. bet. Lafflin st. and Throop st.	6	Posts erected.
st. bet. Peoria st. and Sangamon st.	1	Post erected.
st. bet. Halsted st. and Green st.	1	
et. Leavitt st. and Robey st.	7	Posts erected.
bet. N. Halsted st. and N. Union st.	4	Posts erected.
bet. Fulton st. and Carroll st.	3	Posts erected.
bet. W. Tyler st. and W. Van Buren st	2	Posts erected.
on st. bet W. Kinzie st. and Hubbard st.	2	Posts erected.
bet. W. Van Buren st. and W. Tyler sts.	4	Posts erected.
uren st. bet. Canal st. and Jefferson st.	7	
t. W. Washington and W. Madison sts.	2	Posts erected.
n st. bet. Loomis and Throop sts.	4	Posts erected.
h st. bet. Jefferson and Halsted sts.	11	Posts erected:
bet. W. Madison and W. Adams sts.	10	Posts erected.
bet. W. Van Buren and W. Harrison sts.	8	Posts erected.
t. W. Randolph and W. Washington sts.	1	Post erected.
s st. bet. W. Madison & W. Washington sts.	2	Posts erected.
bet. W. Lake and W. Washington sts.	4	
et. Leavitt and Oakley sts.	7	
bet. W. Lake and Carroll sts.	7	Posts erected.
bet. N. Lincoln and N. Robey sts.	6	Posts erected.
st. bet. Fulton and Walnut sts.	3	Posts erected.
uren st. bet. Morgan and Aberdeen sts.	3	Posts erected.
bet. W. Jackson and W. Adams sts.	3	Posts erected.
bet. N. Morgan and a point 125 feet west.	2	
st. bet. W. Harrison and William sts.	8	

WEST DIVISION.---Continued.

WHERE ERECTED.	No. Posts.	REMARKS.
Fulton st. between N. Robey and N. Lincoln sts.	6	Posts erected.
Clinton st. next N. of Madison st.	1	
W. Harrison st. bet. Centre av. and Aberdeen st.	5	Posts erected.
Halsted st. bet. W. Harrison and W. 12th sts.	24	Posts erected.
W. Monroe st. bet. Lafflin and Throop sts.	6	Posts erected.
W. Lake st. bet. Leavitt and Robey sts.	2	Posts erected.
Clinton and Washington sts., S. E. corner.	1	Post erected.
Warren st. bet. Hoyne and Leavitt sts.	5	Posts erected.
Leavitt st. bet. Warren st. and Park av.	3	
W. Monroe st. 50 feet E. of Aberdeen st.	1	Post erected.
Chicago av. about 100 feet E. of N. Halsted st.	1	Post erected.
Clinton st. bet W. Lake and W. Randolph sts.	2	Posts erected.
S. Jefferson st. between Mitchell and Meagher sts.	12	Posts erected.
Chicago av. bet. Rucker st. and Milwaukee av.	7	Posts erected.
Sheldon st. bet. W. Lake and W. Randolph sts.	2	
Halsted st. bet. W. Lake and W. Harrison sts.	20	Posts erected.
Milwaukee av. bet. Desplaines and Rucker sts.	9	Posts erected.
Clinton st. bet. W. Lake and W. Randolph sts.	2	Posts erected.
W. Monroe st. bet. Reuben and Lafflin sts.	7	
W. Monroe st. and Morgan st. at intersection.	2	Posts erected.
Chicago av. bet. Rucker and Noble sts.	17	Posts erected.
Robey st. bet. W. Monroe and W. Madison sts.	3	
W. Monroe st., Reuben st. and Lafflin st.	3	
Reuben st. bet. W. Adams and W. Jackson sts.	3	
Tyler st. bet Centre av. and Aberdeen st.	2	

NORTH DIVISION.

Division st. bet. Townsend and Sedgwick sts.	3	Posts erected.
Oakwood st. alley next E. of Robey st. to a point 300 feet E. of said alley.	3	
N. Franklin st. bet. Kinzie and Illinois sts.	6	Posts erected.
North av. E. line N. La Salle to W. line Dayton st.	42	Posts erected.
Maple st. E. of N. Dearborn st.	1	Post erected.
N. Franklin st. bet. Schiller st. and North av.	10	Posts erected.
N. Dearborn st. bet. Elm and Schiller sts.	15	Posts erected
Schiller st. bet. N. Dearborn and N. State sts.	3	
Erie st. bet. N. Market and N. Wells sts.	6	
N. La Salle st. bet. North av. and Schiller st.	9	Posts erected.
N. Dearborn st. bet. Oak st. and Washington Place.	7	Posts erected.
Sedgwick st. bet. North av. and Division st.	18	Posts erected
Chicago av. bet. N. Clark and N. Dearborn sts.	3	
Indiana st. bet. N. Wells st. and Indiana st. bridge.	16	
Washington Place bet. N. Clark & N. Dearborn sts.	2	
Wendell st. E. of N. Wells st.	2	
Division st. bet. N. Clark and N. Dearborn sts.	3	
Larrabee st. from Clybourne av. 400 ft. N. of North av.	16	Posts erected.
Sedgwick st. from Division st. 400 ft. south.	4	Posts erected.
Clybourne av. bet Division and Larrabee sts.	11	Posts erected.
Bremer st. from Chicago av. to a point 800 ft. north.	8	
N. Dearborn st. bet. Schiller st. and North av.	11	

WHERE ERECTED.	No. Posts.	REMARKS.
Ohio st. bet. N. Clark and N. La Salle sts.	2	
Townsend st. from Chicago av. a point 800 ft. N.	7	
N. Clark st. bet. N. Water st. and the Chicago river.	2	
Indiana st. from Rush st. to 120 ft east.	1	
N. State st. bet. Huron and Michigan sts.	6	

SIDEWALKS.

A. W. TINKHAM, ESQ.,

Secretary of Board of Public Works.

SIR: The undersigned respectfully presents his report relating to the construction and re-construction of sidewalks, from April 1, 1867, to March 31, 1868, under the following ordinances:

WEST DIVISION.

FIRST DISTRICT.

Side of Street.	LOCATION OF SIDEWALK. STREET OR AVE.	FROM	TO	Fron'ge in feet.	All built except.
B. S.	Halsted st.	Chicago av.	North Branch.	828	"
B. S.	Trustees st.	Kinzie st.	Northern Term	500	"
N. S.	Front st.	Halsted st.	Carpenter st.	1,397	"
W. S.	Noble st.	Kinzie st.	Hubbard st	358	"
S. S.	George st.	Carpenter st.	Grover st.	400	"
W. S.	Wood st.	Indiana st.	Ashley st.	218	"
S. S.	Fourth st.	Lincoln st.	Paulina st.	1,185	"
W. S.	May st.	Hubbard st.	Second st.	1,386	"
N. S.	Cornelia st.	Reuben st.	Rumsey st.	274	"
S. S.	Chicago av.	Milwaukee av.	Carpenter st.	380	"
S. S.	Indiana st.	Oakley st.	Western av.	525	"
N. S.	Augusta st.	Holt st.	Wood st.	1,782	"
E. S.	Currier st.	Wade st.	Augusta st.	250	"
W. S.	Bickerdike st.	Second st.	Chicago av.	551	"
S. S.	Second st.	Noble st.	Reuben st.	1,215	"
W. S.	Green st.	Philips st.	Chicago av.	788	"
E. S.	Union st.	Fourth st.	W. Erie st.	352	"
S. S.	Wade st.	Elston road	Currier st.	787	"
N. S.	Fourth st.	Curtis st.	Rucker st.	642	" ex. 40 ft.
E. S.	Curtis st.	Fourth st.	Second st.	701	"
E. S.	May st.	Chicago av.	Second st.	584	"
W. S.	N. Robey st.	North av.	Wabansia av.	561	" ex. 120 ft.
E. S.	Holt st.	Bradley st.	Division st.	590	" ex. 25 ft.
E. S.	Morgan st.	Indiana st.	W. Erie st.	699	"
E. S.	Sangamon st.	Indiana st.	W. Erie st.	681	"
S. S.	Augusta st.	Elston road	Reuben st.	2,626	" ex. 100 ft.
B. S.	Fourth st.	Reuben st.	Paulina st.	1,227	"
E. S.	Lincoln st.	W. Indiana st.	Fourth st.	428	"
E. S.	Sangamon st.	Milwaukee av.	Pratt st.	470	" ex. 25 ft.
E. S.	Paulina st.	Chicago av.	Clarinda st.	400	" ex. 50 ft.
N. S.	Cornell st.	Noble st.	Reuben st.	1,000	" ex. 25 ft.
S. S.	Pratt st.	Halsted st.	Sangamon st.	625	"
N. S.	Wabansia av.	Elston road	Milwaukee av.	667	" ex. 150 ft.
E. S.	Ridgeville road	Elk st.	Black Hawk st.	450	"

FIRST DISTRICT.—CONTINUED.

N. S.	North av.	Elston road.	Milwaukee av.	773	All built		
S. S.	W. Indiana st.	Reuben st.	Paulina st.	560	"		
N. S.	W. Indiana st.	Elizabeth st.	Reuben st.	1,868	"	ex.	24 ft.
S. S.	Hubbard st.	Elizabeth st.	Western av.	693	"	ex.	90 ft.
B. S.	Fay st.	W. Erie st.	Pratt st.	1,112	"		
N. S.	Black Hawk st.	Holt st.	Noble st.	556	"	ex.	24 ft.
W. S.	Leavitt st.	Hubbard st.	Indiana st.	329	"		
W. S.	Elston road	Division st.	North av.	3,646	"	ex.	200 ft.
B. S.	Smart st.	Kinzie st.	Hubbard st.	602	"		
B. S.	Dickson st.	Division st.	Northern Term	1,734	"		
E. S.	Reuben st.	Milwaukee av.	Black Hawk st.	1,100	"	ex.	100 ft.
			Total	38.490			

SECOND DISTRICT.

B. S.	Carroll st.	Robey st.	Leavitt st.	2,504	All built	ex.	600 ft.
N. S.	Fulton st.	Robey st.	Leavitt st.	1,253	"		
B. S.	Walnut st.	146 ft. west of	Reuben st.	320	"		
B. S.	Monroe st.	Throop st.	Loomis st.	1,224	"		
E. S.	Laflin st.	Madison st.	Adams st.	724	"		
S. S.	Park av.	Hoyne st.	Leavitt st.	614	"		
B. S.	Hoyne st.	Lake st.	Kinzie st.	2,216	"	ex.	525 ft.
E. S.	Honore st.	Adams st.	Jackson st.	403	"		
N. S.	Warren st.	Oakley st.	Western av.	614	"		
N. S.	Van Buren st.	Aberdeen st.	Center av.	614	"		
E. S.	Center av.	Jackson st.	Van Buren st.	410	"		
W. S.	Loomis st.	Jackson st.	Van Buren st.	362	"		
E. S.	Western av.	Madison st.	Lake st.	1,110	"		
W. S.	Hermitage av.	Jackson st.	Van Buren st.	403	"		
W. S.	Wood st.	Madison st.	Jackson st.	1,274	"		
E. S.	Ann st.	Fulton st.	Carroll st.	317	"	ex.	50 ft.
S. S.	Park av.	Oakley st.	Western av.	629	"		
N. S.	Jackson st.	Seeley av.	Robey st.	288	"		
E. S.	Hoyne st.	Madison st.	S.W. cor.L.4B.5	610	"		
S. S.	Randolph st.	Elizabeth st.	Sheldon st.	428	"		
E. S.	Ada st.	Madison st.	Randolph st.	854	"		
W. S.	Elizabeth st.	Madison st.	Randolph st.	450	"		
W. S.	Ada st.	Washington st.	Randolph st.	346	"		
S. S.	Randolph st.	Sheldon st.	Western av.	239	"		
N. S.	Park av.	Oakley st.	Western av.	628	"		
N. S.	Walnut st.	Leavitt st.	Western av.	1,256	"		
N. S.	Van Buren st.	Throop st.	Loomis st.	200	"		
N. S.	Smith st.	Reuben st.	Paulina st.	110	"		
E. S.	Throop st.	Jackson st.	Van Buren st.	192	"		
S. S.	Carroll st.	Lincoln st.	Robey st.	628	"		
N. S.	Walnut st.	Reuben st.	Oakley st.	1,399	"		
W. S.	Seeley av.	Adams st.	Madison st.	863	"		
W. S.	Paulina st.	Fulton st.	Walnut st.	267	"		
S. S.	Fulton st.	Lincoln st.	Paulina st.	1,254	"		
S. S.	Warren av.	Leavitt st.	Oakley st.	624	"	ex.	48 ft.
E. S.	N. Lincoln st.	Kinzie st.	Carroll st.	277	"	ex.	277 ft.
E. S.	Leavitt st.	Madison st.	Jackson st.	1,320	"		
N. S.	Warren av.	Leavitt st.	Western av.	1,263	"		
S. S.	W Kinzie st.	Wood st.	Lincoln st.	628	"		
S. S.	Adams st.	Loomis st.	Reuben st.	1,252	"	ex.	1,252 ft.
W. S.	Carpenter st.	Fulton st.	Kinzie st.	684	"	ex.	684 ft.
W. S.	Loomis st.	Adams st.	Jackson st.	361	"		
E. S.	Oakley st.	Madison st.	Kinzie st.	2,067	"	ex.	150 ft.
S. S.	Monroe st.	Loomis st.	Reuben st.	800	"		
			Total	34,897			

THIRD DISTRICT.

S. S.	Sampson st.	Blue Island av.	Center av.	392	All built.	
S. S.	Liberty st.	Union st.	Halsted st.	446	"	
B. S.	Gold st.	Harrison st.	Gurley st.	872	"	
E. S.	Union st.	Twelfth st.	O'Brien st.	373	"	
E. S.	May st.	Harrison st.	Gurley st.	416	"	
E. S.	Nutt st.	Sixteenth st.	To Terminus.	641	"	
N. S.	Twelfth st.	Laflin st.	Loomis st.	628	"	
N. S.	Harrison st.	Halsted st.	Center av.	2,316	"	ex. 200 ft.
W. S.	Sangamon st.	Van Buren st.	Harrison st.	748	"	
W. S.	Lumber st.	Jefferson st.	Union st.	947	"	
W. S.	Union st.	Sixteenth st.	Eighteenth st.	743	"	
S. S.	Mitchell st.	Throop st.	Laflin st.	1,260	"	
B. S.	Wright st.	Canal st.	Stewart av.	1,028	"	
B. S.	Green st.	Taylor st.	Harrison st.	709	"	
B. S.	Sebor st.	Canal st.	Elsworth st.	1,518	"	
N. S.	Wright st.	Halsted st.	Morgan st.	941	"	
N. S.	Luke st.	Halsted st.	Center av.	2,333	"	ex. 330 ft.
S. S.	Mitchell st.	Blue Island av.	Waller st.	1,173	"	
S. S.	Maxwell st	Blue Island av.	Johnson st.	1,572	"	
E. S.	Newberry st.	Blue Island av.	Wright st.	442	"	
N. S.	Wright st.	Newberry st.	Halsted st.	221	"	
S. S.	Depuyster st.	Halsted st.	Desplaines st.	823	"	
S. S.	Taylor st.	Throop st.	Loomis st.	438	"	
W. S.	Waller st.	Twelfth st.	Maxwell st.	650	"	
S. S.	Nebraska st.	Throop st.	Loomis st.	625	"	
N. S.	Lumber st.	Halsted st.	McCord's addn.	560	"	
N. S.	Kansas st.	Throop st.	Loomis st.	590	"	
W. S.	May st.	Evans st.	Twenty-second	1,725	"	
W. S.	Nutt st.	Sixteenth st.	Terminus.	625	"	
E. S.	Center av.	Blue Island av.	Sixteenth st.	560	"	ex. 200 ft.
S. S.	Frank st.	Waller st.	Blue Island av.	960	"	
W. S.	Throop st.	Van Buren st.	Tyler st.	450	"	
N. S.	Henry st.	Blue Island av.	Laflin st.	1,719	"	
			Total	30,400		

SOUTH DIVISION.

FIRST AND SECOND DISTRICT.

(No ordinance passed this year.)

THIRD DISTRICT.

Side of Street	LOCATION OF SIDEWALK. STREET.	FROM	TO	Whole frontge	All built except.	
W. S.	Stewart av.	Archer av.	Twenty-fourth	533	All built.	
S. S.	Twenty-fourth	Michigan av.	Wabash av.	432	"	
W. S.	Hanover st.	Archer av.	Twenty-fifth st.	1,152	"	
S. S.	Twenty-fifth st.	Wallace st.	Sanger st.	609	"	
S. S.	Twenty-eighth	Michigan av.	State st.	840	"	ex. 50 ft.
S. S.	Twentieth st.	State st.	Prairie av.	1,469	"	
E. S.	Buddan st.	Archer av.	Twenty-sixth st	2,262	"	
N. S.	Egan av.	Lake av.	Vincennes av.	2,281	"	
E. S.	Reuben st.	Archer av.	Muligan st.	760	"	
E. S.	Laurel st.	Thirty-first st.	Douglas place	2,475	"	

THIRD DISTRICT.—CONTINUED.

N. S.	Twenty-sixth st.	Halsted st.	Wentworth av.	3 630	All built.	
S. S.	Twenty-fourth	State st.	Butler st.	3,263	"	
W. S.	Kankakee av.	Twenty-second	Twenty-fifth st.	1.875	"	
E. S.	Calumet av.	Twenty-ninth	Thirty-first st.	1,150	"	
E. S.	State st.	Thirtieth st.	Thirty-first st.	415	"	ex. 125 ft.
N. S.	Thirty-first st.	State st.	Wentworth av.	1,015	"	
B. S.	Nineteenth st.	Arnold st.	Wentworth av.	344	"	ex. 172 ft.
B. S.	Michigan av.	Thirty-first st.	Thirty-second	1,300	"	ex. 100 ft.
E. S.	Prairie av.	Thirty-first st.	Thirty-third st.	1,260	"	
W. S.	Church st.	Archer av.	Fuller st.	614	"	
S. S.	Douglas place	Cottage Gr. av.	Kankakee av.	1,588	"	
W. S.	Indiana av.	Twenty-fifth st.	Twenty-sixth st	414	"	
S. S.	Douglas place	Forest av.	Indiana av.	598	"	
W. S.	Wentworth av.	Thirty-first st.	Thirty-third st.	1,285	"	
B. S.	Michigan av.	Twenty-ninth	Thirty-first st.	1,670	"	
S. S.	Twenty-third st	Kankakee av.	Calumet av.	405	"	
S. S.	Douglas place	Wentworth av.	Indiana av.	2,135	"	ex. 2,135 ft.
B. S.	State st.	Twenty-eighth	Douglas place	8,323	"	ex. 500 ft.
N. S.	Esplanade st.	Halsted st.	Wallace st.	1,102	"	
N. S.	Twenty-ninth	State st.	Indiana av.	1,162	"	
B. S.	Prairie av.	Twenty-second	Twenty-third st	1,221	"	
E. S.	Deering st.	Archer av.	Thirty-first st.	1,609	"	
W. S.	Deering st.	Thirty-first st.	Lyman st.	798	"	
B. S.	Wabash av.	Twenty-sixth st	Thirty-first st.	5,082	"	
N. S.	Twenty-ninth	State st.	Indiana av.	1,140	"	
S. S.	Douglas place	Lake av.	Cottage Gr. av.	550	"	ex. 192 ft.
E. S.	Ellis av.	Douglas place	Wahpanseh av.	943	"	ex. 132 ft.
N. S.	Thirty-first st.	Halsted st.	Deering st.	1,802	"	
S. S.	Twenty-sixth st	State st.	Indiana av.	1,214	"	ex. 180 ft.
W. S.	Broad st.	Archer av.	Thirty-first st.	680	"	
W. S.	Butler st.	Twenty-sixth st	McGregor st.	790	"	ex. 375 ft.
E. S.	Wabash av.	Thirty-first st.	Thirty-second	635	"	
N. S.	Twenty-first st.	Indiana av.	Prairie av.	333	"	
W. S.	Michigan av.	Thirty-second	Douglas place	1,782	"	ex. 1,150 ft.
E. S.	Kankakee av.	Twenty-ninth	Thirty-first st.	1,188	"	ex. 208 ft.
W. S.	Quarles st.	Douglas place	Wahpanseh av.	1,254	"	
W. S.	Calumet av.	Twenty-sixth st	Thirty-first st.	2,465	"	
W. S.	Indiana av.	Thirty-second	Egan av.	4,224	"	
E. S.	Indiana av.	Thirty-first st.	Douglas place	2,574	"	
E. S.	Prairie av.	Twentieth st.	Twenty-first st.	402	"	ex. 50 ft.
W. S.	Ulman st.	Thirty-first st.	Douglas place	2,376	"	ex. 660 ft.
N. S.	Thirty-first st.	State st.	Michigan av.	728	"	
			Total	80,501		

NORTH DIVISION.

Side of Street.	LOCATION OF SIDEWALKS. STREET.	FROM	TO	Whole front.	All Built except.
S. S.	Superior st.	Market st.	W. Terminus.	1,310	"
B. S.	Townsend st.	Chicago av.	Erie st.	1,488	"
W. S.	Hull st.	Linden st.	Menominee st.	622	"
W. S.	Clybourn av.	Black Hawk st.	North av.	1,056	"
B. S.	Church st.	Menominee st.	Wisconsin st.	1,246	"
B. S.	Oak st.	Market st.	Larrabee st.	2,497	"
W. S.	Hurlbut st.	Lot 8.	North av.	1,450	"
S. S.	Huron st.	Rush st.	St. Clair st.	328	"
S. S.	Whitney st.	State st.	Pine st.	974	"
E. S.	Hurlbut st.	Center st.	Asylum place.	1,211	"
N. S.	Center st.	Franklin st.	Larrabee st.	1,738	"
N. S.	Sophia st.	Clark st.	Larrabee st.	1,554	"
S. S.	Eugenia st.	Wells st.	Sedgwick st.	992	"
N. S.	Franklin st.	Asylum place.	Clark st.	910	"
B. S.	Cedar st.	Rush st.	To the Lake.	1,652	"
B. S.	La Bar st.	Larrabee st.	Division st.	1,424	"
N. S.	Black Hawk st.	Hurlbut st.	Sedgwick st.	510	" ex. 48 ft.
W. S.	Church st.	Black Hawk st.	North av.	595	" ex. 24 ft.
S. S.	Hill st.	Franklin st.	N. Market st.	360	"
N. S.	Center st.	Franklin st.	Larrabee st.	1,580	"
E. S.	Hurlbut st.	Center st.	Asylum place.	1,093	"
W. S.	Block st.	North av.	Linden st.	520	" ex. 75 ft.
N. S.	Maple st.	Clark st.	To alley west.	166	"
			Total, feet.....	25,826	

Total number of feet frontage.....210,014 feet.
Total number of Ordinances in the Third Division....198.

Number of Lineal Feet of Sidewalk Constructed During the Year Ending March 31, 1868.

SOUTH DIVISION.

FIRST DISTRICT—FROM RIVER TO HARRISON STREET.

11,911	feet	plank	walk	16	feet	wide,	new.
1,265	"	stone	"	"	"	"	"
159	"	"	"	14	"	"	"
100	"	"	"	12	"	"	"
5,690	"	plank	"	16	"	"	relaid new.
1,749	"	"	"	14	"	"	new.
1,493	"	"	"	14	"	"	relaid.
280	"	"	"	12	"	"	new.
335	"	"	"	12	"	"	relaid.
397	"	"	"	8	"	"	new.
509	"	"	"	8	"	"	relaid
588	"	"	"	6	"	"	new.

24,476 total feet, $4\frac{6}{10}$ miles.

SECOND DISTRICT—FROM HARRISON STREET TO 18TH STREET.

7,897	feet	plank	walk	6	feet	wide,	new.
6,580	"	"	"	6	"	"	relaid.
4,135	"	"	"	8	"	"	new.
1,475	"	"	"	8	"	"	relaid.
545	"	"	"	10	"	"	new.
400	"	"	"	10	"	"	relaid.
4,017	"	"	"	14	"	"	new.
3,060	"	"	"	14	"	"	relaid.
5,800	"	"	"	16	"	"	new.
2,220	"	"	"	16	"	"	relaid.
1,690	"	"	"	8	"	"	new.

37,819 total feet, $7\frac{2}{10}$ miles.

THIRD DISTRICT—FROM 18TH STREET TO EGAN AVENUE.

76,386	feet	plank	walk	6	feet	wide,	new.
6,519	"	"	"	6	"	"	relaid new.
935	"	"	"	8	"	"	new.
150	"	"	"	8	"	"	relaid new.
83	"	"	"	12	"	"	new.
1,279	"	"	"	16	"	"	new.

85,352 total feet, $16\frac{2}{10}$ miles.

WEST DIVISION.

FIRST DISTRICT—FROM NORTH CITY LIMITS TO KINZIE STREET.

80	feet	plank	walk	16	feet	wide,	new.
125	"	"	"	16	"	"	relaid.
7,800	"	"	"	14	"	"	new.
200	"	"	"	14	"	"	relaid.
200	"	"	"	12	"	"	new.
980	"	"	"	12	"	"	relaid.
58,180	"	"	"	6	"	"	new.
23,323	"	"	"	6	"	"	relaid.

90,888 total feet, $17\frac{2}{10}$ miles.

SECOND DISTRICT—FROM KINZIE STREET TO VAN BUREN.

31,486	feet	plank	walk	6	feet	wide,	new.	
40,951	"	"	"	6	"	"	relaid	new.
399	"	"	"	8	"	"	"	"
5,365	"	"	"	14	"	"	"	"
6,079	"	"	"	16	"	"	"	"

84,280 total feet, 16 miles.

THIRD DISTRICT—FROM VAN BUREN STREET TO SOUTH BRANCH.

19,353	feet	plank	walk	6	feet	wide,	new.	
30,084	"	"	"	6	"	"	relaid	new.
500	"	"	"	12	"	"	new.	
805	"	"	"	16	"	"	relaid	new.

50,742 total feet, $9\frac{6}{10}$ miles.

NORTH DIVISION.

FIRST DISTRICT—FROM RIVER TO DIVISION STREET.

7,000	feet	plank	walk	25	feet	wide,	new.	
64	"	stone	"	25	"	"	new.	
12,998	"	plank	"	16	"	"	relaid.	
1,000	"	"	"	14	"	"	new.	
3,000	"	"	"	8	"	"	new.	
1,200	"	"	"	12	"	"	relaid	new.
22,096	"	"	"	6	"	"	new.	
22,149	"	"	"	6	"	"	relaid	new.

69,507 total feet, $13\frac{2}{10}$ miles.

SECOND DISTRICT—FROM DIVISION STREET TO NORTH LIMITS.

13,301	feet	plank	walk	6	feet	wide,	new.	
26,535	"	"	"	6	"	"	relaid	new.

39,836 total feet, $7\frac{1}{12}$ miles.

AGGREGATE AMOUNT.

First	District,	South	Division	4 6/10	miles.
Second	"	"	"	7 2/10	"
Third	"	"	"	16 2/10	"
First	"	West	"	17 2/10	"
Second	"	"	"	16	"
Third	"	"	"	9 6/10	"
First	"	North	"	13 2/10	"
Second	"	"	"	7 5/10	"
Total				91½	miles.

The total number of miles of sidewalks reported now laid in e city, is as follows:

North Division	91	miles.
South "	122	"
West "	220	"
Total	433	miles.

The number of feet of sidewalks constructed by city contractor, ayable from appropriation and assessment, amounts to 12,188 et, as follows:

4,960 feet in the West Division.
6,926 " " South "
302 " " North "

J. L. HANCHETTE,
Supt. of Sidewalks.

BRIDGES.

New bridges were constructed during the year at Lake street, Van Buren street, Eighteenth street and Chicago avenue. These are all pivot bridges, and constructed at high grade, so as to permit the passage of tugs, canal boats, etc., beneath, without opening. They were all designed by Superintendent Thompson and built under his supervision, and are nearly similar to Clark street bridge, having wrought iron chords and wooden braces, which can readily be replaced when found decayed or defective.

The Chicago pivot bridges, in convenience, and the facility with which they are handled, are believed to be equal to any in our country. In no place are they so severely tested.

Public Buildings.

Expenditures of considerable amount were made on the Court House, Armory, City Bridewell and North Market, for their preservation and repair.

Several new buildings were erected during the year for the use of other departments of the city government.

For the Board of Education—the Carpenter school, corner of Centre avenue and Second street, the Holden school, corner of Deering and Thirty-first street, and the Hayes school on Leavitt street, between Walnut and Fulton streets—all four-story brick buildings; and the two-story wooden buildings termed the Elm street Primary School, situated at the corner of Elm and Rush streets, and the Wentworth avenue Primary School, situated at the corner of Wentworth avenue and Twentieth street.

For the Board of Police—the brick engine house and police station on Chicago avenue near Milwaukee avenue.

These buildings have already been described in the respective reports of the Boards of Education and Police.

PUBLIC PARKS.

At Lincoln Park, the artificial lakes were finished during the year, many of the artificial elevations, and the more important of the drives and walks. Eight temporary bridges were constructed at various places, a considerable number of trees planted, and much work done generally in grading, trenching and raising the ground, clearing away the low brush, etc. The carrying out of the original plan of improvement had so far progressed that by the close of the year the park had become attractive in appearance and a place of public resort.

At Union Park, the preparatory work for the formation of the park was in active progress during the year. The grounds were spaded and leveled preparatory to seeding; 2,300 feet of sewers constructed through the park, about 2,800 feet of the main drive macadamized and much work done in the formation of the walks. Fifteen hundred trees were planted. The artificial lakes and mounds were being made when the year closed.

At Lake Park the work was confined to filling in the basin between the railroad and the shore, ground of considerable extent being there made at comparatively small cost.

But little work was done at the other small parks, or public squares of the city.

In conclusion, the Board respectfully refer you to the accompanying report of the City Engineer for a more complete representation of matters under his supervision, and particularly as to the water and sewerage works of the city; and to the appended financial statement, (of all funds excepting special assessment funds) and exhibiting their expenditures in detail.

Respectfully submitted.

A. H. BURLEY,
J. McARTHUR,
W. H. CARTER,
Board of Public Works.

REPORT OF THE CITY ENGINEER.

CHICAGO, October 1st, 1868.

To the Board of Public Works:

GENTLEMEN: Your engineer herewith respectfully presents his Seventh Annual Report, being for the year ending March 31, 1868.

The first subject in order is the

REPORT OF THE ENGINEER OF THE PUMPING WORKS.

PUMPING DEPARTMENT WATER WORKS,
CHICAGO, October 1, 1868.

E. S. CHESBROUGH, Esq.,
City Engineer.

SIR: I submit herewith my Fourteenth Annual Report of the operations of this department, it being for the year ending March 31, 1868.

The total quantity of water pumped during the past year was 4,231,791,659 gallons, being an increase of nearly 1,063,000,000 gallons, or say 33 per cent. over that pumped the previous year.

The following record will exhibit the aggregate operations of the Works, each month during the past year:

OPERATIONS OF ENGINES AND BOILERS.

MONTHS.	No. of days run.	No. of hours and minutes run.	Average No. of hours run per day.	Av. gallons water pumped per day.	Total gallons water pumped per month.	Pounds of coal consumed for pumping.	Pounds of coal consumed while at rest.	Total coal used per month.	Total revolutions per month.
1867		H. M.	H. M.						
April	30	592 18	19 59	9,396,824	281,904,710	724,000	13,400	737,400	348,556
May	31	680 16	21 57	9,123,010	282,813,313	688,300	8,600	696,900	455,614
June	30	679 58	22 40	10,611,964	318,358,925	774,710	5,000	779,710	431,741
July	31	723 46	23 21	11,720,074	363,322,276	868,830	3,400	872,230	450,305
August	31	726 41	23 26	12,111,023	375,441,736	930 630	2,400	993,030	463,925
September	30	687 27	23 55	11,832,189	354,965,654	917,040	2,200	919,240	449,128
October	31	719 24	23 13	12,180,193	377,585,973	900,240	2,000	902,240	465,008
November	30	698 21	22 31	11,693,341	350,800,232	878,920	2,800	881,720	430,024
December	31	699 55	22 35	12,216,447	378,710,850	949,760	1,400	951,160	483,675
1868									
January	31	739 22	23 51	12,255,233	380,912 240	1,633,280	1,600	1,034,880	435,152
February	29	695 17	23 54	13,133,353	380,867,239	925,320		925,320	419,744
March	31	742 05	23 57	12,455,113	386,108,511	955,720		955,720	416,661
Totals	366	8,384 50	22 57	11,560,730	4,231,791,659	10,546,750	42,800	10,589,550	5,249,533

The operations as shown in the foregoing table have required the machinery to be kept running over 95 per cent. of the whole time during the year. The total actual running time being 8,384$\frac{50}{60}$ hours, being an average of nearly 23 hours per day.

The whole amount of coal received during the year was		4,851$\frac{730}{2000}$ tons.
Amount on hand April 1, 1867		844$\frac{420}{2000}$ "
Of this amount there has been used for pumping	5,294$\frac{1550}{2000}$ tons.	
For keeping steam when at rest,	21$\frac{1100}{2000}$ "	
For pipe laying, work shop, heating building, etc., etc.	215$\frac{1070}{2000}$ "	
On hand April 1, 1868	163$\frac{1500}{2000}$ "	
Total	5,695$\frac{1220}{2000}$ tons.	5,695$\frac{1220}{2000}$ tons.

The expense due to the operation of engines and boilers during the year are as follows:

Salaries of engineers, firemen and others	$11,007,75
5,294$\frac{1550}{2000}$ tons of coal at an average of 7\frac{03}{100}$ per ton	37,222.17
527 gallons oil	610.99
949 pounds tallow	110.95
Cotton waste	220.31
Hemp and other packing	143.70
Small stores	95.39
Gas for lighting works	300.00
Repairs to engines, boilers, etc.	504.30
Total	$50,215.56
Cost of delivering water per million gallons	$11.87

The following tables show the quantity of water pumped each month for the past ten years, also the daily average and annual increase for the same time:

TABLE SHOWING THE QUANTITY OF WATER PUMPED EACH MONTH.

From January 1, 1858, *to April* 1, 1868.

MONTHS.	1858.	1859.	1860.	1861.	1862.	1863.
January	81,538,179	106,905,665	132,284,454	137,651,918	151,971,047	169,900,255
February	69,426,515	106,401,412	130,800,720	142,071,067	168,931,783	158,108,450
March	82,677,463	102,415,983	150,331,680	135,576,447	192,937,942	159,930,404
April	82,600,782	89,994,235	132,930,546	128,371,178	170,081,570	
May	82,279,920	116,007,263	141,171,078	150,489,168	181,483,032	
June	90,211,505	113,098,416	148,197,024	155,996,352	192,113,518	Hereafter the year commences on the first day of April.
July	101,670,736	133,806,336	166,394,640	147,182,793	209,215,872	
August	107,176,652	123,266,556	152,427,690	168,602,494	195,588,295	
September	108,534,540	131,735,847	132,272,202	152,710,186	186,902,888	
October	101,046,605	141,527,040	148,710,195	149,362,166	199,045,045	
November	86,385,840	127,342,018	150,493,248	153,879,648	187,002,720	
December	98,316,722	122,653,139	130,773,075	145,261,272	175,906,027	
Total	1,091,865,457	1,415,147,910	1,716,786,552	1,767,154,689	2,217,279,739	487,939,109

MONTHS.	1863–4.	1864–5.	1865–6.	1866–7.	1867–8.
April	173,519,952	178,013,170	189,131,463	260,207,901	281,904,710
May	193,119,348	201,471,216	212,575,920	278,006,304	282,813,313
June	194,255,701	230,814,576	249,935,040	271,415,472	318,358,925
July	209,332,677	223,227,723	254,045,040	310,687,104	363,322,276
August	217,561,920	257,109,360	255,641,034	299,800,132	375,441,736
September	217,220,652	237,137,038	266,145,900	262,016,784	354,965,654
October	185,678,001	191,542,516	246,406,639	264,920,802	377,585,973
November	176,132,600	165,033,042	200,101,293	224,726,521	350,800 232
December	199,592,606	208,044,966	192,616,708	211,366,383	378,710,850
January	209,884,992	232,131,600	236,844,455	259,410,174	380,912,240
February	176,088,647	189,244,751	227,597,773	257,166,480	380,867,239
March	183,712,268	209,569,260	246,776,084	269,036,652	386,108,511
Total	2,336,108,454	2,523,339,218	2,777,817,249	3,168,760,600	4,231,791,659

Table showing the average daily quantity of water pumped, together with the annual increase for the following years:

Years	Per cent.	Average daily quantity of water pumped.	Annual increase.
1858	20.7	2,991,412	
1859	29.7	3,877,118	323,282,453
1860	21.3	4,703,525	301,638,642
1861	2.7	4,841,547	50,368,137
1862	25.5	6,074,739	450,125,050
1863	5.0	6,382,810	37,081,917
1864	8.3	6,913,258	207,715,858
1865	10.0	7,610,459	254,478,131
1866	14	8,681,536	390,943,260
1867	33	11,562,273	1,063,031,050

MACHINE SHOP.

For a number of years the work of manufacturing hydrants, stop-valves, and doing other work for the city, was carried on in a small shop composed of a portion of one of the coal sheds. Of late years, however, this shop had become too small to meet the demands upon it for the work necessary for the city, and when the plans for the reconstruction of the works were made, they embraced a building for new shops.

The building erected for this purpose was completed last fall, and occupied in February last.

The building is a very substantial and tasty structure, two stories high, built of brick. The first story is devoted to machine, blacksmith, carpenter shops, and stables. The upper story is also well adapted to like work, but is at present used for storage, etc.

The ample proportions and convenient arrangement of the new building affords satisfactory facilities for carrying on the work more expeditiously and with greater economy than heretofore, and will, no doubt, answer the purpose for which it is intended for a number of years to come.

During the past year there were manufactured of new fire hydrants 207

New stop valves, as follows:

4 inch	31
6 "	36
8 "	12
Total	79

In addition to these a number of old hydrants and stop valves were repaired, besides, a variety of work was done for the various departments of the city.

The total expenditure for labor and material in the foregoing work is	$10,887.92	
Add for interest and depreciation of tools	400.00	
Value of work done at less than current rates		$15,757.53
Leaving as earnings for the shop during the year	4,469.61	
	$15,757.53	$15,757.53

There are remaining on hand of new hydrants 38

New 4 inch stop valves,	10
" 6 " " "	7
" 8 " " "	1
Total,	18

The value of these, together with the raw material on hand, amounts to	$3,148.75
Value of tools and patterns	2,000.00
Total	$5,148.75

The general condition of the pumping machinery remains about the same as date of last report. No accident worthy of mention has occurred during the year, therefore no repairs of an

important character have been done upon the engines. The boilers, however, have received some little attention in this particular.

In consequence of the delay in completing the north wing of main building, and the unfinished condition of the connection of the tunnel with the new pump well, as well as that of laying the connecting mains between engines and new water tower, the new engine was not used for some time after it was completed. On the 20th of July, the work alluded to had so far progressed as to admit water to the new pump well. The new engine was then started, and after making some alterations in the face of pump valves, by substituting wood for rubber, and placing additional fastenings upon columns, it has continued in operation most of the time since then, giving general satisfaction.

A glance at the foregoing tables will show that during the past year the demand for water greatly exceeded that of any former year, and may be regarded as a fair index of the future.

It will be observed that while the daily average quantity pumped for the year was about eleven and a half millions gallons, yet it is proper to mention that on several days in July and August of the present year, the quantity of water pumped averaged about eighteen millions for the twenty-four hours, and at times, during some of those days, the pumping was at the rate of nearly twenty millions.

It will be noticed, also, by the accompanying tables, that the consumption of water has about doubled each five years during the past decade.

If this increase should continue in the same ratio in the future, and it is highly probable that such will be the case, the *united* capacity of the present machinery will be taxed to its maximum to meet the average demand, but when cases occur as cited above, where the quantity of water required for a number of hours, so far exceeded the general average for the year, it may be taken as the *true* measure of capacity for the anticipated future increase.

The past year has been an eventful one in the history of this department. Much important work has been done, and many

changes made, necessary to meet the constantly increasing demand for water.

During the year, the last vestige of what was once one of the "landmarks" of our city has passed away. The old and stately brick building, with its *leaning water tower*, have passed into memory. They had stood the summer's sun and winter's blast for sixteen years, and from their portals thousands of millions of gallons of water have passed upon its mission of health, wealth and prosperity to our citizens. Not a brick is left to mark the spot where the old buildings once stood, but the many hours of labor and anxiety experienced within their walls by yourself and others, in the discharge of professional duties, cannot well be forgotten. Chicago has outgrown her water works of sixteen years ago. To-day, upon the site of the old buildings, stand in their stead, white stone structures, which for beauty, strength and magnitude, are probably unsurpassed by any buildings in the United States for like purposes. The works were first started for regular supply early in 1854. For more than a year thereafter, the city was supplied by a small high pressure engine, and required from six to ten fire hydrants to be open in order that the water might pass off freely. Now, about fourteen millions gallons are used daily, and as the water pipes are being continually and rapidly extended, it will not be difficult to estimate the quantity that will be required in the future. It seems apparent, therefore, that to meet any considerable increase in the consumption of water, with that degree of safety and surety which the peculiar character of our works demands, our pumping facilities will soon need the additions which have heretofore been anticipated, and which are already provided for in the new buildings. Nor will even this constitute the end, because it is presumed that the extent and capacity of a water supply must necessarily be co-extensive with the growth and prosperity of the locality in which it may be located. Hence, it may be safe to hazard the probability that the *final completion* of our water works, will probably occur simultaneous with that of our city.

The delay in issuing this report enables me to record here that the south "shell curb" has been built and sunk to the required

depth, by R. E. Moss, Esq., the contractor, and at this writing, A. Walbaum, Esq., the contractor for building, is making rapid progress towards the final completion of the south wing and boiler room. A full and detailed description of the work done during the past two years will be necessary in order to fully comprehend the magnitude and varied character of the additions and improvements made, but as the illustrations heretofore promised, which are deemed necessary to accompany a description of the kind, are in an unfinished state, and as this report is over due, their issuance must be again deferred.

Respectfully,

DEWITT C. CREGIER,

Engineer.

Connection between Lake Tunnel and Pumping Well.

The gate chamber and connections between it and the new, or north, and the old pumping wells were completed during the municipal year. A branch tunnel from the connection between the gate chamber and the proposed south pumping well, was carried so far as it prudently could be before this well was sunk. A branch tunnel was also made from the gate chamber for about 160 feet towards the lake, to serve as a part of the proposed supplementary or shore tunnel, to be used in case the lake tunnel should require cleansing or repairs, and in anticipation of the entire abandonment, as an inlet, of the present basin.

Owing to the unusual amount of work required of this department during the year, it has not been possible to prepare suitable plans and descriptions of the lake tunnel, new engine and other portions of the new or enlarged water works; but it is hoped and believed that such will be presented in the next Annual Report.

The *temporary connection* between the lake tunnel and the old inlet served a most useful purpose in supplying the city with pure water very nearly a year before the completion of the gate chamber and connections with the pumping wells. It is a great pity the beautiful, sparkling, bubbling well in the temporary shaft, viewed with delight by so many visitors, could not be made a perpetual feature of the water works; but the completion and use of the permanent connections with the pumping wells, does away with the necessity and desirableness of using the temporary inlet and shaft any longer. In fact, a very recent examination of the old inlet showed that structure to be in such a dilapidated state that its usefulness would soon have terminated, even if the lake tunnel had not been constructed.

Inlet Basin.

This is more dilapidated than ever. The possibility, however, that something might happen to the lake tunnel to suspend its use for a season, leads to such a care of the basin as would make it capable of serving as an inlet again, if necessary. This is particularly the case while there is any doubt on the part of the Board as to the propriety of completing the supplementary or shore tunnel.

Distributing Pipes.

There were laid during the year ending March 31st, 1868, the following main and distributing pipes, viz:

SOUTH DIVISION.

On what Street.	Between what Streets.	Diameter in inches.	Length in feet.
Douglas avenue.	From Cottage Grove avenue west	4	680
Hanover street.	Archer avenue and McGregor	6	1,200
Twenty-third st.	Wentworth avenue and Hanover	4	1,880
Calumet avenue.	Twenty-fifth and Twenty-sixth streets	6	700
" " .	Twenty-third and Twenty-fourth streets	6	786
Ellis avenue....	From Douglas avenue south	4	1,425
Twenty-fifth st .	Calumet and Cottage Grove avenues	6	114
" "	State street and Wabash avenue	4	490
Deering street..	Archer avenue and Thirty-first street	6	1,680
Haddock Place.	La Salle street and Wabash avenue	8	1,822
Quarry street ..	From end of pipe north	6	530
Twentieth street	Wentworth avenue and Grove	4	1,070
Purple street...	Elgin and Twenty-first	4	240
Wabash avenue.	Twenty-fifth and Twenty-sixth	6	614
Wabash avenue.	Lake and South Water	8	486
Indiana avenue.	From Twenty-ninth street north	6	500
Douglas avenue.	From east end of pipe east	4	159
Kankakee ave..	Twenty-fourth and Twenty-fifth	6	700
Twenty-seco'd st	State and Burnside	4	480
Prairie avenue .	Twenty-second and Twenty-third	6	670
La Salle street..	Madison and Van Buren	6	1,925
La Salle street..	Madison street and Haddock Place	8	1,660
State street.....	From Twenty-ninth north	8	3,045
Michigan ave...	From Thirty-first st. south	6	490
Michigan ave...	Lake and Randolph	6	500
Butterfield st...	Sixteenth and Seventeeth	4	400
Church Place ..	From Archer avenue north	4	450
Jackson street..	La Salle street intersection	4	150
	Hydrants	4	692
	Total		25,488

WEST DIVISION.

Adams street...	From end of pipe west	6	190
Aberdeen street.	Taylor and Eleventh	4	430
Aberdeen street.	Harrison and Gurley	4	480
Aberdeen street.	From Van Buren north	4	200
Brown street...	From Twelfth south	4	2,025
Blue Island ave.	Twelfth and Catherine	6	2,430
Barber street...	From end of pipe to Halsted	4	280
Catherine street.	Blue Island avenue and Morgan street	4	1,945
Canal street....	Taylor and Forquer	6	286
Carroll street...	Lincoln and Robey	4	740
Coolidge street .	Loomis and Reuben	4	1,814
Centre avenue..	Polk and Taylor	6	897
Centre avenue..	From Twenty-second north	6	750
Eighteenth st...	Halsted and Union	6	662
Chicago avenue.	From Carpenter east	16	2,000
Chicago avenue.	From Carpenter east	24	100
Cornell street...	Chase and Rose	4	1,020
Carpenter street	Front and George	4	376
Carpenter street	Chicago avenue and Third	8	1,090
Carpenter street	Chicago avenue intersection	8	40
Canalport ave..	Union and Halsted	6	450
Cornelia street..	Milwaukee avenue and Noble street	4	835
Dekoven street.	Clinton and Canal	4	400
Dix street.....	From Fifth north	4	200
Emma street...	Milwaukee avenue and Reuben street	4	1,080
English street..	Union and Halsted	4	530
Elston road	From Milwaukee avenue north	4	1,210
Elston road.....	From Milwaukee avenue north	6	920
Ewing street...	From Canal street east	4	230
Front street....	Carpenter street and Elston road	4	800
First street.....	From Reuben west	4	680
Fulton street..	Wood and Lincoln	4	650
Fulton street...	Paulina and Reuben	4	430
Fulton street...	Elizabeth and Ada	4	510
Grover street...	Chicago avenue and George street	6	790
George street ..	Grover street and Elston road	4	360
Gold street.....	Harrison and Gurley	4	495
Hubbard street.	Elizabeth and Reuben	6	2,294
Halsted street ..	Harrison and Taylor	6	895
Halsted street ..	Chicago avenue intersection	6	154
Honore street ..	Monroe and Jackson	6	960
Harrison street.	From end of pipe west	6	350
Hamilton street	From Monroe south	4	340
Hunt street....	From end of pipe west	4	345
Indiana street..	Paulina and Reuben	4	680
Indiana street..	End of pipe and Bickerdike	4	900
Johnson street .	Taylor and Twelfth	4	870
Johnson street .	Twelfth and Maxwell	6	490
Lake street	Leavitt street and Western avenue	4	1,316
Lake street	Wood and Lincoln	6	660
Lisle street.....	Union and Halsted	4	530
Lincoln street..	Madison and Adams	6	1,050
Leavitt street...	From Lake north	6	570
Laflin street ...	From Madison south	4	320
Morgan street..	From Third south	8	1,540
Morgan street..	From Randolph north	8	3,065
Miller street ...	Harrison and Taylor	4	1,810
McHenry street.	From Waubansa avenue north	4	516

WEST DIVISION.---Continued.

Maxwell street..	From Stewart avenue west	6	270
Mitchell street..	Blue Island avenue and Rucker	4	100
May street.....	From Twenty-second north	6	500
Milwaukee ave.	From Augusta northwest	6	1,175
Monroe street..	From Hoyne west	4	412
Monroe street..	From Reuben east	4	450
Monroe street..	Lincoln and Honore	4	364
Mark street....	Chicago avenue and Second	4	675
Noble street....	Chicago avenue and Second	6	800
Noble street....	From Chicago avenue north	6	50
Peoria street...	Van Buren and Jackson	4	482
Peoria street...	Monroe and Madison	4	480
Park avenue...	Leavitt and Oakley	6	700
Paulina street..	Fourth and Indiana	6	550
Reuben street..	First and Third	6	790
Robey street...	Madison and Van Buren	6	1,900
Randolph street	Union Park and Sheldon	6	440
Centre avenue..	Milwaukee avenue and George	6	716
Centre avenue..	Taylor and Twelfth	6	712
Sebor street....	Clinton and Jefferson	4	443
Sangamon street	Adams and Van Buren	4	990
Seward street...	Sixteenth and Canalport avenue	4	442
Tyler street....	Morgan and Aberdeen	6	780
Taylor street...	Sholto and May	6	504
Taylor street...	Jefferson and Clinton	6	420
Third street....	From Carpenter west	4	900
Third street....	Morgan and Carpenter	8	400
Third street....	Reuben and Paulina	4	514
Union street....	O'Brien and Maxwell	6	460
Jefferson street.	Polk and Ewing	4	290
Will street.....	Milwaukee avenue and Augusta	4	580
12th street.....	Loomis and Reuben	8	1,350
Gurley street...	End of pipe and Aberdeen	4	165
4th street	Reuben and Paulina	4	686
4th street	Union and Desplaines	4	470
4th street	Carpenter street intersection	6	50
5th street	Front and Dix	4	600
Washington st..	Lincoln and Robey	4	900
Washington st..	Wood and Paulina	4	714
Washington st..	End of pipe and Sheldon	4	780
Walnut street ..	Paulina and Robey	4	1,089
2d street	Mark and Rucker	4	280
2d street	Noble and Paulina	4	2,350
	Hydrants	4	1,589
	Total		76,142

NORTH DIVISION.

On what Street.	Between what Streets.	Diameter in inches.	Length in feet.
Chicago avenue	Main pipe at Engine House	28	160
Chicago avenue	Main pipe at Engine House	24	740
Chicago avenue	From east end of pipe towards the Lake	4	180
Superior street	Clark and La Salle	4	430
Superior street	Kingsbury and Townsend	4	420
Townsend street	Oak and Division	6	1,465
Pleasant street	Division and Vedder	4	540
Larrabee street	Oak and Division	6	1,400
Larrabee street	Grant place and Grove	6	700
Bremer street	Oak and Division	6	1,200
Sedgwick street	End of pipe and Division	6	1,375
Sedgwick street	From Grant place south	6	1,200
Sedgwick street	Wisconsin street and Asylum place	6	1,200
Mohawk street	From Black Hawk north	6	564
Mohawk street	Linden street and Centre street	4	1,927
Centre street	Sedgwick and Hurlbut	6	678
Church street	Wisconsin and Centre	4	700
Lincoln avenue	From Sedgwick north	4	700
Lincoln avenue	Larrabee street intersection	6	145
Hurlbut street	Asylum place and Fullerton	6	1,444
Hurlbut street	From North avenue south	6	440
Franklin street	Wisconsin and Menomanee	4	670
Franklin street	Sigel and Schiller	4	380
Clark street	From City R. R. Stables to Maple street	6	290
White street	State and Cass	4	430
Erie street	Pine and St. Clair	4	513
Illinois street	From St. Clair east	4	490
Hobbie street	Larrabee and Crosby	6	448
Crosby street	From end of pipe north	4	316
Wesson street	Oak and Division	4	1,360
Oak street	Bremer and Larrabee	4	60
Dearborn street	From Schiller north	4	970
Grant place	From end of pipe to Larrabee	4	1,150
Asylum place	Larrabee street intersection	6	140
Grove street	Larrabee and Orchard	4	665
Hinsche street	Black Hawk street and Clybourne avenue	4	370
Market street	Division and Elm	4	350
Elm street	From Market east	4	40
	Hydrants	4	639
	Total		26,889

Giving a total of $24\frac{34}{100}$ miles of pipe laid during the year, about $1\frac{1}{2}$ miles of which was on streets in which the increased demand for water rendered it necessary to take up the smaller and lay down larger sized pipe.

The total length of pipes, of different sizes, in the city April 1st, 1868, as nearly as can be ascertained, is as follows, viz:

		Feet.
28 inch	cast iron main	160
24 "	" "	22,922
16 "	" "	12,610
12 "	" "	9,830
30 "	wrought iron river pipe, State street	280
24 "	" " Chicago avenue	236
24 "	" " Rush street	530
12 "	" " Adams street	176
12 "	cast iron distributing pipe	844
10 "	" " "	7,862
9 "	wrought iron distributing and siphon pipe, on Archer avenue	90
8 "	cast iron distributing pipe	85,432
6 "	" " "	328,684
4 "	" " "	448,969
3 "	" " "	28,566
		947,191

or 179 miles and 2,071 feet.

Observations made in previous reports relative to the necessity of more large sized pipes, may be, with much propriety, renewed in this. Great relief has been given to the northwest portion of the city by the laying of the sixteen inch main on Chicago avenue, between Union and Carpenter streets, and there connecting with the eight inch pipe laid northward last year on Morgan and Carpenter streets. Other parts of the city would be nearly or quite as much benefited as this by larger mains.

HYDRANTS.

During the year the following new hydrants were established viz.:

SOUTH DIVISION.

1 S. W. corner Hanover and McGregor streets.
1 S. W. " " " Bushnell "
1 N. W. " Ellis and Wahpanseh avenues.
1 N. W. " Deering and Lyman streets.
1 S. W. " " " Thirty-first streets.
1 S. W. " " street and Archer avenue.
1 N. E. " Twentieth and Grove streets.
1 N. W. " " " Purple "
1 S. W. " Wabash avenue and Twenty-sixth street.
1 N. W. " " " " Twenty-fifth "
1 N. W. " State and Twenty-fifth streets.
1 N. W. " Indiana avenue and Twenty-ninth street.
1 N. W. " Kankakee avenue and Twenty-fourth street.
1 N. W. " " " " Twenty-fifth street.
1 N. E. " Twenty-second and Burnside streets.
1 S. W. " La Salle and Monroe streets.
1 S. W. " " " Adams streets.
1 N. W. " State and Twenty-sixth streets.
1 N. W. " " " Twenty-seventh streets.
1 N. W. " " " Twenty-ninth streets.
1 S. E. " Jackson and La Salle streets.
1 N. W. " State and Twenty-fourth streets.
1 N. W. " " " Twenty-third streets.
1 W. side of Quarry street north end of pipe.
1 S. W. corner La Salle and Lake streets.
1 N. side of Douglas avenue, 600 feet west of Cottage Grove.
1 Archer avenue opposite McGlashen street.

E. corner Harrison and State streets.
W. " Indiana avenue and Twenty-first street.
Total in the South Division.

WEST DIVISION.

W. corner Washington and Robey streets.
W. " Walnut and Lincoln streets.
E. " Milwaukee avenue and Emma street.
side of Emma street, west end of pipe.
" Milwaukee avenue, at N. W. end of pipe.
W. corner Rucker and George streets.
E. " Carpenter and George streets.
W. " Noble and Second streets.
E. " Lake street and Western avenue.
W. " Lake and Oakley streets.
W. " Hubbard and Armour streets.
W. " " " Noble streets.
E. " " " Elizabeth streets.
W. " Indiana avenue and Reuben street.
W. " Sangamon and Van Buren streets.
W. " " " Jackson streets.
W. " English and Union streets.
W. " Lisle and Union streets.
W. " Brown and Twelfth streets.
side Blue Island avenue, opposite Coolidge street.
" " " " Hastings street.
W. corner Aberdeen and Eleventh streets.
W. " Third and May streets.
W. " Second and Rucker streets.
W. " Cornelia and Noble streets.
W. " Park avenue and Oakley street.
W. " " " Leavitt street.
E. " Coolidge and Laflin streets.
E. " " " Reuben streets.
W. " Brown and Maxwell streets.
W. " " " Mitchell streets.
W. " Jefferson and Ewing streets.
E. " Twelfth and Reuben streets.

1 N. W. corner Twelfth and Laflin streets.
1 N. W. " Aberdeen and Gurley streets.
1 S. W. " Miller and Polk streets.
1 N. E. " Catherine street and Blue Island avenue.
1 N. W. " " and Morgan streets.
1 N. W. " " and Margaret streets.
1 N. W. " George and Grover streets.
1 N. E. " Front street and Elston Road.
1 N. W. " Second and Paulina streets.
1 S. W. " Reuben and Second streets.
1 S. W. " " " Third streets.
1 N. W. " Indiana and Bickerdike streets.
1 N. W. " " " Noble streets.
1 N. W. " " " Ada streets.
1 S. W. " Lincoln and Adams streets.
1 N. E. " Monroe and Honore streets.
1 S. W. " " " Robey streets.
1 S. W. " Union and O'Brien streets.
1 N. W. " " " Maxwell streets.
1 N. W. " Morgan and Fourth streets.
1 N. W. " Third and Morgan streets.
1 N. W. " Honore and Jackson streets.
1 N. W. " Carroll and Robey streets.
1 N. W. " Johnson and Maxwell streets.
1 N. W. " Randolph and Sheldon streets.
1 W. end of pipe on Randolph street, at Union Park.
1 S. W. corner Robey and Adams streets.
1 S. W. " " " Jackson streets.
1 N. W. " Fourth and Reuben streets.
1 S. W. " Paulina and Fourth streets.
1 N. W. " Elston Road and Augusta street.
1 E. side of Elston Road, at north end of pipe.
1 Engine House on Lake street, west of Reuben street.
1 N. W. corner Washington and Paulina streets.
1 N. W. " " " Page streets.
1 N. W. " Centre avenue and Second street.
1 E. side Blue Island avenue, opposite Sampson street.
1 N. W. corner Morgan and Lake streets.
71 Total in West Division.

NORTH DIVISION.

1 N. E. corner Superior and Kingsbury streets.
1 N. W. " Larrabee and Hobbie streets.
1 N. W. " " " Elm streets.
1 N. W. " Bremer and Hobbie streets.
1 N. W. " " " Elm streets.
1 N. W. " Sedgwick and Hobbie streets.
1 N. W. " " " Elm streets.
1 S. W. " " " Sophia streets.
1 N. W. " " street and Asylum place.
1 S. W. " Church and Centre streets.
1 N. W. " " " Wisconsin streets.
1 S. W. " Hurlbut street and Asylum place.
1 S. W. " Wesson and Division streets.
1 N. W. " " " Hobbie streets.
1 N. W. " " " Elm streets.
1 N. W. " Dearborn street and Burton place.
1 S. W. " Hurlbut street and Fullerton avenue.
1 N. W. " Grant place and Clark street.
1 W. side Larrabee street, opposite Grant place.
1 S. W. corner Larrabee and Grove streets.
1 S. E. " Lincoln avenue and Asylum place.
1 N. E. " Grove and Orchard streets.
1 N. E. " Hobbie and Crosby streets.
1 W. side Church street, north end of pipe.
1 N. E. corner State and Banks streets.
1 N. W. " Chicago avenue and Pine street.
1 N. W. " Townsend and Elm streets.
1 S. W. " State and Oakwood streets.
1 At the Water Works machine shop.
29 Total in the North Division.

In all 129, making the total number in and belonging to the city, April 1st, 919. Ninety were taken out and renewed during the year, and eleven received more or less repairs.

Owing to the fact of there having been very little snow on the ground during the winter, the frost penetrated to a greater than ordinary depth, yet but 274 of the hydrants, or only about one-

half the number reported last year got frozen and had to be thawed out. As fast as the extensions of the sewers will permit, the hydrants are being connected, which renders them less liable to freeze.

STOP-COCKS.

The following stop-cocks have been put in during the year, viz:

SOUTH DIVISION.

1 4 inch, Wentworth avenue, south line of Sixteenth.
1 8 " Haddock Place, east line of State.
1 8 " " " west line of State.
1 6 " Hanover, south line of Twenty-fourth.
1 4 " Ellis avenue, south line of Douglas avenue.
1 6 " Prairie avenue, south line of Twenty-second.
1 6 " La Salle, north line of Adams.
1 4 " Twenty-fifth, east line of State.
1 6 " Michigan avenue, south line of Thirty-first.
1 8 " State, south line of Twenty-fourth.
1 8 " Haddock Place, east line of Clark.
1 6 " Kankakee avenue, south line of Twenty-fourth.
1 6 " Calumet avenue, " " "

WEST DIVISION.

1 4 inch, Walnut, west line of Lincoln.
1 4 " Miller, south line of Polk.
1 6 " Hubbard, west line of Rucker.
1 4 " Indiana, west line of Reuben.
1 4 " Sangamon, south line of Adams.
1 4 " Seward, south line of Sixteenth.
1 4 " Mark, south line of Chicago avenue.
1 6 " Blue Island avenue, south line of Twelfth.
1 6 " " " " " " Polk.
1 4 " Second, between Noble and end of pipe.
1 4 " First, west line of Reuben.
1 4 " Second, " " "
1 4 " Third, " " "

1 6 inch, Honore, south line of Adams.
1 6 " Grover, north line of Chicago avenue.
1 4 " Carroll, west line of Lincoln.
1 6 " Johnson, south line of Twelfth.
1 8 " Carpenter, south line of Chicago avenue.
1 4 " Fourth, west line of Reuben.
1 6 " Hubbard, west line of Elizabeth.
1 6 " Lincoln, south line of Adams.
1 8 " Chicago avenue, at east end of the bridge.
1 6 " Reuben, south line of Adams.
1 6 " Chicago avenue, west line of Carpenter.
1 6 " Noble, south line of Chicago avenue.
1 6 " Rucker, south line of Polk.
1 6 " Robey, south line of Adams.
1 8 " Halsted, north line of Chicago avenue.
1 8 " Halsted, south line of Chicago avenue.
1 4 " Jefferson, south line of Polk.

NORTH DIVISION.

1 6 inch, Townsend, north line of Oak.
1 4 " Pleasant, " " Division.
1 4 " Market, " " Chicago avenue.
1 6 " Larrabee, " " Oak.
1 6 " Sedgwick, " " "
1 4 " Lincoln avenue, west line of Sedgwick.
1 4 " White, east line of State.
1 3 " Bremer, north line of Oak.
1 4 " Wesson, " " "

In all 52; making, together with those previously put in, 454 in the city to date.

Seventeen stop-cocks were renewed during the year.

RESERVOIRS.

No important change has taken place in these. The same need of improvement in the surroundings of the north and south ones remains.

QUALITY OF THE WATER.

The character of the water furnished by the Lake Tunnel has been a subject of congratulation generally. As compared with what was sometimes necessarily given to the citizens before, it is always excellent, but as compared with itself from day to day, the water flowing through the Lake Tunnel is not always precisely the same either in clearness, taste or temperature. Easterly winds sometimes render the lake slightly turbid miles outside of the crib; an extraordinary freshet in the river at the breaking up of winter, is found to affect for a day at least, both the clearness and taste of the water, and the difference between the cold of winter and the heat of summer necessarily affects, very perceptibly, the temperature of the water, notwithstanding it may be drawn from near the bottom of the lake. It is fortunate the Lake Tunnel was carried out two miles instead of only one, as was seriously proposed at one time. Frequent observations since the completion of this work show conclusively that at a distance of one mile out, the lake is often nearly or quite as much affected by filthy water from the river as it is near the shore.

THE LAKE TUNNEL.

The completion of this work was mentioned in the last Annual Report. It has continued to perform its functions ever since without any indication of injury anywhere except from ice, which piled up at one time in enormous masses against the south side of the crib, and at other times cut grooves into the sheathing around that structure, and on one corner rubbed entirely through the sheathing into the solid timbers. The house or covering of the crib, a very temporary structure, was broken into twice by storms, and had to be repaired; but the lower portion of the crib does not appear to have been moved the slightest appreciable distance from its original position.

At one time the screens put in to keep out fish from the entrance into the Lake shaft were stopped by anchor ice, but as this occurred in the night, the citizens were not aware of the partial stoppage of their usual supply. The screens were taken out and no trouble from this cause has occurred since.

Actual observation shows that the tunnel is capable of supplying more water under a given head than the original estimates called for. This was the case with the Croton and Cochituate aqueducts. Gratifying, however, as this fact is, at the present rate of the growth of Chicago, it is a mere question of time, and not a very long time either, as to when a new tunnel will be required.

SEWERAGE.

CHICAGO, March 31, 1868.

To E. S. CHESBROUGH, ESQ., *City Engineer:*

SIR: Herewith is presented a report for the year ending with date, of the number and location of the sewers laid, of catch basins and manholes built, of repairs and cleansing of the sewers, and of the private drains connected with them, during the said year

The amount of the sewers laid was greater than has been laid by the Board during any previous year, and the season having been unusually dry, the work has been executed in very wet localities in a satisfactory manner.

LENGTH IN FEET OF SEWERS BUILT TO APRIL 1, 1868.

Diameter in feet.	S. DIVISION.		W. DIVISION.		N. DIVISION.		TOTAL THREE DIVISIONS.		
	Previous to April, 1 1867.	From April 1, 1867, to April 1, 1868.	Previous to April 1, 1867.	From April 1, 1867, to April 1, 1868.	Previous to April 1, 1867.	From April 1, 1867, to April 1, 1868.	Total Previous to April 1, 1867.	To'als April 1, 1867, to April 1, 1868.	Total Sewers.
6	1,419		1,292		3,895		6,606		6,606
5	4,267		28,340	2,515	11,124	2,632	43,731	5,147	48,878
4½	1,033		22,823	8,746	6,238		30,094	8,746	38,840
4	3,286	1,031	14,526	7,726	5,498	1,555	23,310	10,312	33,622
3½			1,332				1,332		1,332
3	17,951	852	1,613	792	5,579	1,120	25,143	2,764	27,907
2½	33,068	10,939			3,544		36,612	10,939	47,551
2¼	6,359						6,359		6,359
2	33,558	5,689	52,070	20 340	47,773	5,261	133,401	31,290	164,691
1	72,000	4,533	33,794	8,473	32,387	7,477	138,181	20,483	158,664
Total.....	172,941	23,044	155,790	48,592	116,038	18,045	444,769	89,681	534,450
Total..	195,985		204,382		134,083		$84\frac{1369}{5280}$ miles.	$16\frac{5201}{5280}$ miles.	$101\frac{1170}{5280}$ miles.

CATCH BASINS AND MANHOLES BUILT.

Built from April 1, 1867, to April 1, 1868.				Previously Built.	Total.	Average Cost, 1867.
	S. Div.	W. Div.	N. Div.			
Catch Basins.....	101	253	64	2,234	2,652	$74.62
Man Holes.....	165	273	117	3,027	3,582	

Of the very large amount of sewers authorized by the Common Council, there remains to be completed the following:

In the West Division, 1,329 ft. of 4 ft. sewers and 1,700 ft. of 12 in. pipe sewer.	Estimated cost,	$12,644
In the North Division, 3,390 ft. of 12 in. pipe sewer.....	" "	4,287
80 Catch Basins.....	" "	5,600
Total.....		$22,531

Of the sewers built during the past year, there were 3,125 ft. in the West Division, 2,664 ft. in the South Division, and 2,248 ft. in the North Division, chiefly main sewers, which were on uncompleted contracts of 1866, and the cost of the same amounted to $44,506.27.

Detailed Statement of the sewers laid from April 1, 1867, to April 1, 1868.

LOCATION.			5 ft.	4 ft.	3 ft.	2½ ft.	2 ft.	1 ft.
SOUTH DIVISION,								
ON WHAT ST.	FROM	TO						
Archer av	Ogden Slip	North-eastward		1,031				
Twenty-sixth	Calumet av	Kankakee av			421			
Nineteenth	20 ft. E. of dock line	Grove			255			
Eighteenth	So. B. Chicago River	Grove			176			
Calumet av	Twenty-sixth	Twenty-fifth				665		
Indiana av	Twenty-sixth	Twenty-ninth				1,331		
Kankakee av	Twenty-sixth	Twenty-ninth				1,335		
Michigan av	Twenty-sixth	Twenty-ninth				1,347		
Calumet av	Twenty-sixth	Twenty-ninth				1,353		
Prairie av	Twenty-sixth	Twenty-ninth				1,338		
Nineteenth	Grove	Burnside				1,531		
Prairie av	Twenty-second	Twenty-third				680		
Calumet av	Twenty-second	Twenty-third				688		
Wabash av	Twenty-fifth	Twenty-sixth				671		
Prairie av	Twenty-fifth	Twenty-fourth					686	
Indiana av	Center 29th st	South					19	
Kankakee av	Center 29th st	South					18	
Burnside	Nineteenth	Eighteenth					916.5	
	Seventeenth	Sixteenth						
South Clark	Nineteenth	Eighteenth					919	
	Seventeenth	Sixteenth						
Twenty-first	Wentworth av	Burnside					872.5	
Twentieth	Archer av	Burnside					240	
Twenty-third	Prairie av	Westward					82	
Calumet av	Twenty-third	Twenty-fifth					1,296	
Wabash av	Twenty-fifth	Twenty-fourth					640	
Burnside	Seventeenth	Eighteenth						
	Twentieth	Twenty-first						1,268
	Twenty-first	Twenty-second						
South Clark	Seventeenth	Eighteenth						
	Twenty-second	Twenty-first						1,164
	Twenty-first	Archer av						
Third av	Twelfth	Fourteenth						1,263
Archer av	Hanover	Stewart av						622
Indiana av	Wing sewers at 18th 20th and 21st							216
Total South Division				1,031	852	10,939	5,689	4,533
NORTH DIVISION.								
ON WHAT ST.	FROM	TO						
North Clark	Division	North av	2,632					
North av	Larrabee	Sedgwick		1,317				
Chicago av	River	Larrabee		238				
North av	Sedgwick	Wells			1,065			
Larrabee	Chicago av	Northward			55			
Schiller	La Salle	Dearborn					891	
Goethe	La Salle	Clark					430	
Whiting	Wells	Franklin					438	
Hinsdale	Wells	Chestnut					509	
Division	State	Eastward					410	
Oak	Rush	Dearborn					665	
Maple	La Salle	Dearborn					755	
Elm	La Salle	Clark					360	
Elm	Wells	Eastward					269	
Burton	Clark	Dearborn					407	
Pearson	Pine	Eastward					127	
Bremer	Chicago av	Northward						725
Superior	St. Clair	Westward						115
Indiana	Pine	Eastward						250
Illinois	Pine	Eastward						240
Oak	Rush	Eastward						760
Pearson	North Wells	Eastward						240
Pearson	North Market	Westward						240
La Salle	Division	296 ft. N of Schiller						1,657
Dearborn	Division	256 ft. N. of Burton						2,262
Maple	Dearborn	Eastward						311
Chestnut	Dearborn	Eastward						334
Chicago av	Wing sewers fr. Sedgwick to Kingsbury							343
Totals, North Division			2,632	1,555	1,120		5,261	7,477

LOCATION.			6 ft.	4½ ft.	4 ft.	3 ft.	2½ ft.	2 ft.	1 ft.
WEST DIVISION.									
ON WHAT ST.	FROM	TO							
Taylor	63 ft. w. of Desp.	W. line Halsted	1,221						
Maxwell	Jefferson	Halsted	1,294						
Van Buren	Centre av.	Loomis		1,330					
Taylor	Halsted	Throop		3,328					
Madison	Throop	Reuben		1,991					
Adams	Loomis	Eastward		365					
Milwaukee av	Chicago av.	Elston Road		384					
Twelfth	Centre av.	Loomis		1,348					
Madison	Reuben	Robey			2,661				
Chicago av.	Centre av.	Reuben			2,662				
West Indiana	Centre av.	Noble			1,329				
Lake	Reuben	Paulina			726				
West Erie	Milwaukee av	Sangamon			79				
Eighteenth	228 ft. e. of Larr.	Westward			269				
Sixteenth	Union	Halsted				523			
Chicago av.	River	Westward				269			
Leavitt	Washington	Madison						650	
Desplaines	Hubbard	Fourth						785	
Halsted	Van Buren	Dekoven						2,577	
Halsted	Twelfth	Sixteenth						2,662	
Halsted	Milwaukee av	Fourth						391	
Sheldon	Randolph	Washington						499	
Blue Island av.	Halsted	Eleventh						2,272	
Reuben	Lake	Park av						484	
Morgan	Van Buren	Jackson						435	
Green	Van Buren	Jackson						469	
Green	Milwaukee av.	Fourth						51	
Peoria	Adams	Van Buren						938	
Clinton	Van Buren	Twelfth						2,765	
Jefferson	Van Buren	Twelfth						2,766	
Jefferson	16 f. s. of n. l. Mbr	Southward						241	
Union	Milwaukee av	Fourth						873	
Union	16 f. s. of n. l. Mbr.	Southward						234	
Laflin	Madison	Monroe						490	
Lincoln	Cent. of Madison.	Northward						25	
Paulina	Park av.	Warren						723	
West Erie	Milwaukee av	Eastward						80	
Second	Milwaukee av	Westward						100	
Clinton	Sebor Ewing Dekoven	Mather Forquer Bunker							705
Jefferson	Sebor Ewing Dekoven	Mather Forquer Bunker							705
Blue Island av.	Gurley Ewing Twelfth	Hope Forquer Eleventh							984
Monroe	Centre of Laflin.	310 ft e & 403 f. w.							713
Park av.	Reuben	Page							991
Warren	Reuben	Page							990
Indiana	Milwaukee av.	Eastward							69
Aberdeen	Van Buren	Jackson							436
Centre av.	Van Buren	Jackson							437
Mitchell	Canal	Jefferson							775
Price Place	Desplaines	Halsted							873
Peoria	Madison	Monroe							449
Brown	Twelfth	Southward							330
Fourth	Desplaines	Westward							24
Total, West Division,			2,515	8,746	7,726	792		20,340	5,473
" North "			2,632		1,555	1,120		5,261	7,477
" South "					1,031	852	10,939	5,689	4,533
Totals, each size, in 1867-8, ft.,			5,147	8,746	10,312	2,764	10,939	31,290	20,483
Average cost per fo t,			$8.44	$7.40	$7.26	$6.42	$4.00	$2.88	$1.88

Total feet, 89,681=16$\frac{52}{52}\frac{01}{80}$ miles.

There has also been laid in Union Park 2680 lineal feet of 12-inch sub-soil drains under the carriage road, bedded in gravel, with open joints.

REPAIRS OF SEWERS, CATCH BASINS AND COVERS.

	R'ps of Sewers.		R'ps Catch Basins.		Repairs of Covers.		Totals,
	Ft. Rpd.	Cost.	No. of Rpd	Cost.	No of	Cost.	each Division.
South Division,.....	537	$809.71	95	$369.30	Renewed, 126 Repaired, 222	$1,289.56	$2,468 57
West Division, ...	50	195.27	188	1,249.91	Renewed, 135 Repaired, 168	1,020.90	2,466.08
North Division, ...	1,371	1,503.56	193	2,161.45	Renewed, 120 Repaired, 547	996.76	4,661.77
Total, 3 Divisions,..	1,958	$2,508.54	476	$3,780.66	Renewed, 381 Repaired, 547	$3,307.22	$9,596 42

CLEANSING OF SEWERS AND CATCH BASINS.

METHOD OF CLEANSING.	South Division.		West Division.		North Division.		Totals.		
	Feet cl'nsed.	Cost.	Feet cl'nsed.	Cost.	Feet cl'nsed.	Cost.	Feet cl'nsed.	Cost.	Per 100 ft.
By Flushing,.....	118,790	$3,641.22	79,530	$2,126.24	53,070	$1,490.18	251,390	$7,257.64	$2.88
By Chain Machine,	48,929	4,630.42	41,010	3,615.82	18,377	1,760.86	108,316	10,007.10	8.69
Cleansing Mains by men inside, ...	200	85.64	36,090	1,433.32	32,390	841.12	68,680	2,360.08	3.43
Totals,.....	167,919	8,357.28	156,630	7,175.38	103,837	4,092.16	428,386	19,624.82	4.58 av.
Cleansing C. Basins,	No. of 848	2,335.46	No of 921	2,646.63	No. of 695	1,933.90	No. of 2,464	6,915.99	2.80 ea
Total cost of cleansing 3 Divisions,...		10,692.74		9,822.01		6,026,06		26,540.81	

The same remarks with regard to the less amount of cleansing of the sewers, required on the paved streets, compared with the unpaved streets, which were made in my report of last year, apply to the work of this year also.

PERMITS ISSUED FOR PRIVATE DRAINS,

to be connected with the sewers, from April 1st, 1867, to April 1st, 1868.

PART OF CITY.	6 inch Drains.	9 inch Drains.	12 inch Drains.	Total in 1867-8.	Total laid previously.	Total, April 1st, 1868.
South Division, ...	1,383	31	5	1,419		
West Division, ...	1,187	60	3	1,250		
North Division,.....	1,019	14	1	1,034		
Totals,.....	3,589	105	9	3,703	8,860	12,563

Yours respectfully,

WILLIAM H. CLARKE,

Princ'l Assist. Engineer.

CONDITION OF THE RIVER.

This continues substantially the same as in previous years, so far as occasional offensiveness is considered. The opportunities of pumping at Bridgeport to advantage during very dry weather in the season of navigation, and the small amount of work done at the distilleries on the North Branch, have been very favorable in their effect, so that the natural consequence of the increase of the discharges of the sewers into the river has not been felt.

HARBOR.

The works at the entrance of the Harbor are now entirely carried on by the National Government and the Chicago Dock and Canal Company. The North Pier Extension, it was hoped, might be completed to a point six hundred feet beyond the end of the pier built by the city, but owing to unfavorable weather, and accidents to cribs, during the last season, the work, as it now stands, affords little if any protection to the harbor entrance. Soundings show that during the prevalence of easterly winds this spring, the tendency of the bar to obstruct navigation at the mouth of the river increases at an alarming rate. It is earnestly desired that the government will expend, as soon as possible, a portion of the appropriation for the harbor in dredging out the channel at the end of the pier.

WASHINGTON STREET RIVER TUNNEL.

The contractors for this structure, at the commencement of the year, after removing about 9,800 cubic yards of excavation, and commencing a coffer dam on the east side of the river, abandoned the work, and it was relet to Messrs. J. K. Lake, John Clark and Charles B. Farwell on the 20th of July last. Mr. Clark afterwards withdrew from the company, and Mr. A. A. McDonnell joined it.

About six weeks after the original contractors abandoned the work, the bracing of the deep excavation just east of the river gave way, letting the sides of the cut in and causing considerable

damage to the warehouse of Messrs. Austrian & Leopold, making it necessary to cut off a portion of their building, and also to encroach upon the coal yard of Messrs. Grey & Kellogg on the north side of the street.

The new contractors began their work at the extreme ends of the approaches, and have, up to this time, completed the retaining walls, except coping, of the open approaches. Rather more than one-fifth of the masonry in the arched or covered portion of the tunnel has been laid, including the lower portions of the entrance houses of the foot-way. In consequence of the alteration on the foot-way, a great deal of labor was required in revising and changing the plans and specifications for the whole of the river portion of the tunnel, and of the foot-way from end to end. During most of the winter, work was suspended. A complete description of this work with suitable illustrations, it is hoped, will accompany the next annual report.

DOCK LINE SURVEY.

This was completed about the first of October, and the drawings are nearly finished.

In consequence of the apparent hesitation to incur the great expense of carrying out the proposed widening of the river and branches, a very small force has been employed recently on the plans.

Respectfully submitted,

E. S. CHESBROUGH,
City Engineer.

FINANCIAL STATEMENT.

Balance, Ledger, Board of Public Works, March 31, 1868.

WATER DEPARTMENT.

	DR.	CR.
Works	$2,418,402.93	
Works—New South Well	,562.40	
Works—New Engine	132,980.42	
Works—Income		$2,244,749.31
Works—New Tower	90,562.18	
Loan Bonds, six per cent		1,030,000.00
Loan Bonds, seven per cent		1,515,000.00
Loan Interest	878,081.41	
Expenses and Repairs	812,139.67	
nt on six per cent. Water Loan Bonds	46,637.46	
mball, Comp. Bond Account	62,000.00	
Fund in hands of City Treasurer	4,188.34	
Works Stock	25,963.00	
Works Coal	1,765.47	
led Coal Accounts		5,584.68
n, Sherman & Co.—Coupon Account	127,035.00	
Works Service Cocks	1,040.71	
Pipes	18,501.49	
ing Works—Stock on hand	3,770.79	
Wood & Co.	3,299.16	
Works—New Inlet	32,219.64	
Works—New Shops	19,934.32	
Works—New Engine House	111,249.60	
	$4,795,333.99	$4,795,333.99

WATER FUND.

STATEMENT of the Cash Receipts by the Board of Public Works, from April 1, 1867, to March 31, 1868, inclusive; and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds of 663 Bonds	$639,760.23		
Less advanced on same in March, '67..	25,000.00		
		$614,760.23	
Temporary Loans		128,000.00	
Water Tax Collected		337,467.93	
Received for tapping pipes		15,165.58	
Received for sale of hydrants, materials and labor		4,042.78	
Received for setting meters		1,364.26	
Received for letting on water		475.45	
Voucher canceled		4,712.18	
H. R. Worthington & Co.—refunded on meter bill		310.62	
Plumbers licenses and bonds		48.05	
Interest refunded		16.38	
		$1,106,363.41	
Balance on hand April 1, 1867		8,848.96	$1,115,212.37

EXPENDITURES.

ADDITION TO WATER WORKS.

DISTRIBUTING PIPES LAID.

		Cash Payment.	*True Cost.*
ron pipe, 4, 6, 8, and 12 inch	$134,533.22		
g and laying pipe, and building h basins	23,973.92		
hing and backfilling	18,716.71		
	13,893.91		
s, caps, sleeves, bends and branches,	8,902.50		
	3,991.08		
ıg pipe	2,857.36		
g	2,178.80		
making connection with tower and engine house	1,462.00		
er	1,026.84		
ıt	764.81		
cting pipe—(plumbers)	716.48		
ats and feed	464.14		
pipe	399.50		
ıt on pipe and boxes	574.63		
t	357.34		
	270.95		
	199.28		
	179.81		
	162.51		
ty on hydrants	110.00		
tising	90.69		
and furnaces	65.86		
fittings	52.78		
vault cover	55.00		
	48.00		
blankets and covers	45.00		
ing plugs	43.36		
	36.00		
shoeing	27.00		
ing wagons	27.10		
ing	26.30		
	43.75		
r clothing	21.50		
	20.10		
ing harness	15.75		
ns, oil and wick	27.90		
ıneous	16.23		
			$216,399.06

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$216,899.06	
ADD—			
Pipe used previously paid for.....	$12,666.78		
New hydrants put in.....	4,286.67		
New stop-cocks put in.....	1,327.95		
Tools, materials and labor from shop...	1,021.55		
Discount on seven per cent. bonds.....	13,423.23		
	$32,726.18		
DEDUCT—			
Labor and materials for private parties.	2,704.71		
	$30,021.47		$246,420.
TEMPORARY CONNECTION WITH LAKE TUNNEL.			
Labor.....	$990.92		
Lumber	2.16		
		993.08	993.
Total addition to cost of Water Works, not including new engine and buildings (at present incomplete).....		$217,392.14	$247,413.
NEW ENGINE.			
G. W. Quintard—on account of engine....	$24,500.00		
G. W. Quintard—half cost of smoke pipe,	237.50		
Smoke pipe.....	254.00		
Draughtsman.....	250.00		
Carpenter work.....	98.25		
Coal	14.00		
Expenses on box.....	8.80		
Bolts.....	1.15		
		$25,363.70	
ADD—			
Alteration of steam and feed pipe.....	$2,293.49		
Labor on foundation.....	33 53		
Labor and materials at shop.....	73.62		
Discount on seven per cent. bonds sold,	1,553.25		
	$3,953.89		29,317.
NEW SOUTH WELL.			
N. S. Bouton & Co —Cast iron shoe.....	$4,596.60		
Labor.....	633.56		
Draughtsman.....	125.00		
Drain pipe	62.75		
Cement	98.40		
Gravel.....	33.00		
		5,549.31	
ADD—			
Labor and materials at shop.....	$13.09		5,562.
Amounts carried forward,.....		$30,913.01	$34,879.

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$30,913.01	$34,879.99
NEW INLET.			
Labor	$4,247.14		
Draughtsman	250.00		
Cement.....	775.35		
Iron for Gates.....	852.39		
Castings	158.74		
Lumber	162.99		
Valve Pieces.....	221.50		
Coal.....	28.12		
Oakum	26.88		
Pipe.....	23.20		
Lamps, Burners, and Wick.....	18.95		
Shovels and Wheelbarrows.....	17.00		
Pump.....	38.50		
Pails	10.00		
Steel	4.13		
Miscellaneous.....	6.04		
		6,840.93	
ADD—			
Labor and materials from shop	$442.42		7,288.35
NEW TOWER.			
A. Wallbaum, on account of contract	$33,335.55		
A. Wallbaum, extras.....	510.62		
G. W. Quintard, 4 stop cocks.....	3,000.00		
Do. cast-iron base for standing column....	892.50		
Do. carting, hauling, & labor on same	434.75		
C. Reissig & Co., balance for stand pipe..	742.66		
N. S. Boreton & Co., castings for connecting with main	2,778.42		
Warren Foundry, pipe.....	2,589.96		
F. Letz, extra iron work on stairs and floors...	1,181.30		
Architect	1,600.00		
J. Clark & Bro., carpenter work and materials.....	1,090.92		
Inspecting	979.50		
Twenty-four inch pipe	222.60		
Lightning Rod.....	81.48		
Gas fitting and fixtures.....	50.00		
Amounts carried forward,...	$49,490.26	$37,753.94	$42,163.34

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$49,490.26	$37,753.94	$42,163.34
Signs	21.50		
Printing	20.00		
Coal for Inspector's office	3.51		
		49,535.27	
ADD—			
Labor and materials from shop	509.30		
Discount on seven per cent. bonds sold	3,044.37		
	3,553.67		53,088.94
NEW SHOPS.			
C. Paesch, on contract for masonry work.	$7,990.00		
Do. extras.....	1,042.42		
W. Goldie, on contract for carpenter work	7,698.42		
Architect	600.00		
Inspector.....	159.00		
Painting and glazing	200.00		
Filling about building	193.25		
Shafting boxes.....	146.10		
Carpenter work	131.50		
Advertising.....	66.74		
Lumber	46.89		
Freight on Castings.....	26.14		
Hardware	19.69		
		18,320.15	
ADD—			
Labor and materials from shop	495.83		
Discount on seven per cent. bonds sold	1,118.34		
	$1,614.17		19,934.32
NEW ENGINE HOUSE.			
A. Wallbaum, on account of contract ...	$33,100.00		
Do. extras	1,747.77		
J. Clark & Bro., on account of carpenter work	10,800.00		
Do. paid F. Letz on roof....	7,444.66		
Do. extras...	1,703.34		
F. Letz, boiler room roof.....	2,600.00		
Architect services	1,900.00		
Inspectors	1,388.50		
Walworth, Twohig & Furse, on account of heating.....	1,550.00		
Extra slating.....	495.85		
Gas fitting and fixtures.....	456.05		
Painting and glazing	2,100.00		
Plumbing	249.00		
Amounts carried forward,.....	$65,535.17	$105,609.36	$115,186.60

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$66,535.17	$105,609.36	$115,186.60
Mantles and grates	142.05		
Draughtsman	125.00		
Expenses to N. J. for pipe	145.00		
Lumber.....	192.53		
Labor	257.75		
Lightning rod.....	73.50		
Advertising and Printing	69.06		
Lints, mouldings, and strips	55.73		
Freight on pipe.....	34.16		
Drain pipe.....	30.00		
Signs.....	21.50		
		66,681.45	
ADD—			
Tearing down and cleaning brick.....	3,245.75		
Damper for smoke chimney.....	359.66		
Labor and materials for heating apparatus	4.04		
Discount on seven per cent. bonds sold	4,100.58		
			74,391.48
	$7,710.03		
		$172,290.81	$189,578.08

Working Expenses and Repairs.

EXPENSES AT PUMPING WORKS.

		Cash Payment.	*True Cost*
Salary of Engineer and three assistants..	$ 6,999.96		
Labor	14,279.75		
Coal, 4450$\frac{1}{2}\frac{8}{0}\frac{8}{0}$ tons (cash paid)	25,706.49		
Coal for steaming boilers	151.49		
" " heating building	604.58		
" " work shop	195.77		
Hydrant castings	4,994.23		
Brass castings	2,319.03		
Oil and tallow	998.75		
Iron, nuts and steel	877.46		
Scwenk & Homberg, pipe and labor	600.75		
Gas	459.79		
Waste, gasket and packing	513.74		
Rope, cordage, twine and wick	179.91		
Iron, bolts and labor on boiler	227.60		
Pipe and lead	168.70		
Blossburg coal	112.00		
Putty, varnish, &c	77.29		
Hay, oats and feed	70.74		
Tools and files	81.58		
Leather	67.75		
Four gauges	60.00		
Hauling and transfering coal	53.80		
Boiler felt	65.61		
Use of engine	61.00		
Carpenter work	50.25		
Hardware	43.50		
Horse shoeing	40.50		
Fan	40.00		
Can, pipe and labor	33.38		
Repairing wagon	40.80		
Lag screws	37.50		
Red and white lead	41.50		
Amounts carried forward,	$60,256.21		

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$60,256.21		
Lanterns and lamps	25.00		
Plumbing.....	24.05		
Chain	22.00		
Iron bedsteads	24.00		
Diamond work.....	24.00		
Blank books and stationery	22.48		
Rubber clothing.....	18.75		
Soap	15.30		
Drawing paper.....	12.38		
Emery paper.....	10.25		
Flue brush.....	15.00		
Pump	11.50		
Stove pipe.....	10.10		
Tubes	6.00		
Quicksilver	5.10		
Miscellaneous.....	73.87		
		$60,574.99	
ADD—			
Coal used, previously paid for	$ 7,181.44		
Coal used not paid for	5,584.68		
Stock of April 1, 1867, used.....	5,336.17		
	$18,102.29		
DEDUCT—			
Hydrants, stop cocks and labor used for, and charged to, extension, repairs, and other water accounts$19,096.88			
Hydrants and stop-cocks sold.. 289.00			
Labor and white metal..... 55.18	19,441.06		
	$1,338.77		59,236.22
LAKE TUNNEL.			
Labor	$ 1,011.63		
Light house keeper	930.90		
Use of tugs	1,075.50		
Use of engine	188.39		
Lumber	375.97		
Use of pump.....	131.75		
Oil, chimneys, wicks and lanterns	111.39		
Refreshments for laborers	120.00		
Draughtsman	78.00		
Hose and couplings	64.50		
Fog horn	61.76		
Amounts carried forward, ...	$4,149.79	$60,574.99	$59,236.22

		Cash Payment.	True Cost.
Amounts brought forward,.....	$4,149.79	$60,574.99	$59,236.2
Nails and hardware.....	75.38		
Rope, blocks and twine.....	59.82		
Boat.....	58.25		
Lightning rod on crib	55.26		
Use of surveying instruments.....	40.00		
Brass wire cloth,.....	36.00		
Pipe for crib....	26.65		
Repairing instruments.....	20.35		
Stove	20.00		
Coal	34.97		
Signals	18.00		
Repairing hose.....	6.00		
Miscellaneous	36.81		
		$4,637.28	
ADD—			
Labor and materials from shop	$188.08		$4,825.3
REPAIRS OF PIPES, HYDRANTS, STOP-COCKS, AND MISCELLANEOUS OPERATING EXPENSES.			
Labor	$13,976.76		
Hydrant inspectors and water police.....	5,437.50		
Assessments on South reservoir lots	3,121.12		
Assessments on North reservoir lots.....	1,479.17		
Lumber	380.76		
Walk at North reservoir.....	320.30		
Walk at South reservoir	281.50		
Hay, oats and feed	243.53		
Castings	284.35		
Pipe	165.02		
Laying pipe at Archer Road	418.75		
Brick.....	227.00		
Lead	151.21		
Cement.....	120.05		
Express and telegrams on bonds.....	187.63		
Expense of sale of bonds.....	129.54		
Nails.....	110.50		
Coal	91.39		
Pipe and couplings.....	85.00		
Goose necks	85.00		
Rent of stable lot	41.68		
Car fares	80.00		
Amount credited in error refunded	70.73		
Boring Rods.....	62.90		
Repairing river pipe	89.48		
Amounts carried forward,.....	$27,640.87	$65,212.27	$64,061.58

		Cash Payment.	*True Cost.*
Amounts brought forward, ...	$27,640.87	$65,212.27	$64,061.58
Police badges	30.00		
Scavenger	30.00		
Salt and lime	21.00		
Hardware	42.82		
Oakum and gasket	38.00		
Plumbing	40.40		
Repairing gas pipe	19.25		
Tools	22.29		
Repairing tools, harness and wagons	14.75		
Paving	16.00		
Horse blanket and cover	15.00		
Miscellaneous	68.57		
		$27,998.95	
ADD—			
Hydrants used	$2,592.81		
Stop cocks used	707.38		
Watching engine house, tower, reservoirs and lot	1,086.00		
Labor and material from shop	259.26		
Depreciation in meters	2,014.80		
	$6,660.25		
DEDUCT—			
Received for shutting off and letting on water $475.45			
Labor 271.31			
Pipe sold 70.73			
Tools, &c., charged stock 181.00			
	$998.49		
	$5,661.76		$33,660.71
WATER METERS.			
91 meters	$12,021.50		
Freight on meters	705.39		
Machinist	1,149.99		
Meter connections and labor on same	1,340.55		
Labor	392.00		
Castings	216.89		
Horse keeping	150.30		
Pipe	100.00		
Lumber	91.74		
Carpenter work	62.00		
Meter bottoms	61.75		
Meter counters	41.75		
Repairing wagon	37.20		
Amounts carried forward.	$16,871.06	$93,211.22	$97,722.29

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$16,871.06	$93,211.23	$97,722.23
Tools.....	32.28		
Horse shoeing	27.26		
Plumbing.....	19.43		
Horse blanket and cover.....	15.00		
Repairing harness.....	18.75		
Nails	11.00		
Setting meter	5.34		
Tape measure.....	5.00		
Brass head screws.....	2.16		
Spindle packing...	3.60		
Miscellaneous.....	27.85		
		$16,538.73	
DEDUCT—			
Valuation of meters, charged stock....	$10,825.00		
Received for setting meters.....	1,364.26		
Refunded by H. R. Worthington & Co.	310.62		
	$12,499.88		
ADD—			
Labor and materials from shop.....	68.46		
	$12,431.42		$4,107.31
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners.....	$3,000.00		
Salaries of Secretary and assistant	1,399.96		
Salary of City Engineer.....	1,500.00		
Salaries of book keeper and assistant	1,066.64		
Salaries of clerks.....	3,394.04		
Salaries of Superintendent and one ass't Engineer.....	1,533.32		
Salaries of draughtsmen	1,650.00		
Salaries of messenger, janitor and watchman.....	834.00		
Water assessor and assistant	3,109.92		
Water collectors	3,700.00		
Office rent.....	2,123.53		
Blank books and stationery.....	802.58		
Printing.....	734.47		
Furniture.....	422.68		
Printing and engraving bonds.....	360.00		
Fuel	260.18		
Advertising.....	289.21		
Water rate books	160.00		
Repairs	138.06		
Amounts carried forward,.....	$26,478.59	$109,749.95	$101,829.60

		Cash Payment.	*True Cost.*
Amounts brought forward,	$26,478.59	$109,749.95	$101,826.60
Gas fixtures and fitting	92.58		
Painting, graining and varnishing	89.01		
Revenue and postage stamps	80.34		
50,000 water bills	141.00		
Awnings	71.66		
Carpetings, mattings, curtains and paper	70.44		
Cleaning office and towels	61.85		
Tracing and drawing paper	65.82		
Safe	70.00		
Gas	44.13		
Books and papers	41.46		
Hardware, locks and keys	33.82		
Maps of Chicago and map stand	30.50		
Storing and repairing stoves	29.85		
Ice	22.85		
Sprinkling front of office	15.00		
Weather strips	10.48		
Miscellaneous	129.21	27,578.09	
DEDUCT—			
Received for plumbers licenses	48.05		27,530.04
Total operating expenses		$137,328.04	$129,359.64

WATER LOAN INTEREST.

		Cash Payment.	*True Cost.*
Interest on water loan bonds, July 1, 1867, and Jan. 1, 1868, (paid in New York)...	$123,715.00		
Interest paid by City Treasurer.....	13,655.00		
Interest on temporary loans..... ...	11,003.99		
Interest on mortgage on engine house lot.	2,193.33		
Interest on payment to W. Lill for engine house lot.....	583.62		
Commissions to Duncan, Sherman & Co..	309.29		
Deficiency in former remittances	46.66	$151,506.89	
ADD—			
Amount transferred from discount	$3,737.74		
DEDUCT—			
Interest on temporary loan refunded...	16.38		
	$3,721.36		$155,228.25
BILLS PAYABLE.			
Paid temporary loans	$350,159.81		
Mortgage on engine house lot.....	30,000.00		
Wm. Lill	9,700.00	$389.859.81	389,859.81
INCOME.			
Taxes overpaid refunded.....		96.16	96.16
WATER PIPES.			
Pipe purchased and not used.....		18,501.49	18,501.49
COAL.			
Coal purchased and not used		6,236.93	
DEDUCT—			
Amount of payment refunded..	$4,712.18		
Received for coal sold	340.63		
	$5,052.81		
ADD—			
Amount on hand previously paid for	581.35		
	$4,471.46		1,765.47
R. D. Wood & Co., freight paid on pipe..		3,299.16	3,299.16
William Smith, broken pipe.....		285.78	285.78
Amounts carried forward,.....		$569,786.22	$569,036.12

SERVICE COCKS.

			Cash Payment.	*True Cost.*
Amounts brought forward,.....			$569,786.22	$569,036.12
Services of Tappers		$2,438.00		
Permit clerk.....		537.50		
Taps purchased		6,642.60		
Cast iron boxes		3,349.65		
Hay, oats and feed.....		353.75		
Wagon		240.00		
Horse		150.00		
Harness and repairing harness		80.68		
Advertising.....		58.13		
Horse-shoeing.....		81.54		
Horse-blankets and covers.....		45.00		
Ratchets.....		52.00		
Repairing wagon..		37.60		
Permits returned.....		29.80		
Putting water in tappers' stable.....		20.00		
Two stop-cocks and labor (refunded).....		16.44		
Carpenter work.....		7.50		
Tape measure....		5.00		
Plugs returned.....		2.50		
Miscellaneous.....		19.13		
		$14,226.82	14,226.82	
ADD—				
Service-cocks previously paid for.....		459.36		
Tools made at shop.....		87.99		
		14,774.17		
Tools charged stock.....	$100.00			
Cash receipts for tapping.....	15,165.53			
Service-cocks sold.....	25.44			
Service-cocks on hand April 1, 1868.....	1,040.71			
Profits on service-cock acc'nt,		1,557.51		
	$16,331.68	16,331.68		
Total miscellaneous.....			$584,013.04	$569,036.12
Total addition to Water Works brought forward.....			217,392.14	247,413.61
Total expenditures for New Engine, New Engine House, New Tower, New Work Shop, New Inlet and New South Well, brought forward.....			172,290,81	189,578.08
Total operating expenses, brought forward.....			137,328.04	129,359.64
Totals.....			$1,111,024.03	$1,135,387.45
Total cash expenditures.....		$1.111,024.03		
Balance in treasury April 1, 1868.		4,188.34		
		$1,115,212.37		
Total receipts for the year, including balance of April 1, 1867		1,115,212.37		

SEWERAGE DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1868.

	Dr.	*Cr.*
Sewers, North Division	$409,756.73	
Sewers, South Division	551,885.43	
Sewers, West Division	800,886.95	
Haley Slough	72.14	
S. Lind, Treasurer Sewerage Commissioners	109,245.48	
Sewerage Loan Bonds, 6 per cent		$87,000.00
Sewerage Loan Bonds, 7 per cent		1,612,000.00
Sewerage Loan Bonds Canceled		160,000.00
Sewerage Sinking Fund		59,104.53
Sewerage Sinking Fund Mortgages	5,867.10	
Discount on Sewerage Bonds	19,266.71	
Sewerage Loan Interest		93,978.95
Busch & Brand		626.37
Trustees Chicago Theological Seminary		1,200.00
Sewerage Pipes	5,410.82	
Sewerage Brick	6,500.00	
Sewerage Stock	4,282.42	
American Exchange National Bank	105,775.00	
House Drains		954.28
Dennis Coughlin	1,561.51	
Galena and Chicago Union Railroad Co		382.55
Sewerage Fund in hands of Treasurer—due him		36,418.40
East ½ Lot 3, Block 4, Kinzie's Addition	68.50	
South ½ Lot 5, Block 123, School Section	22.18	
Z. Cobb, Agent 80 feet W. ½ Lot 7, Block 35, O. T.	31.53	
Pittsburgh, Fort Wayne and Chicago Railway Co.		616.84
Chicago, Burlington and Quincy Railway Co		6,744.01
Owners Lots 1, 2, 7 & 8, Block 5, J. R. Storrs' Ad.	94.54	
Cement Account	157.96	
Sewerage Sinking Fund with Treasurer	4,114.65	
Sewerage Man Hole and Catch Basin Covers	4,079.06	
Sewerage Expenses and Repairs	16,357.61	
West Madison Street Drains	110.66	
South Wells Street Drains	198.96	
Amounts carried forward,	$2,045,745.84	$2,059,025.93

	Dr.	*Cr.*
Amounts brought forward,	$2,045,745.84	$2,059,025.93
Washington Street Drains	8.05	
La Salle Street Drains	456.32	
Griswold and Sherman Street Drains	541.50	
Filling North Market Street	1,205.70	
Filling Harrison, Polk and Taylor Streets	312.80	
Woodruff & Raffin	72.00	
Michigan Avenue Drains	3,244.50	
Chicago Avenue Drains	350.60	
Milwaukee Avenue Drains	1,494.74	
Market Street Drains	826.61	
Halsted Street Drains	533.50	
North Clark Street Drains	918.90	
South Clark Street Drains	1,029.07	
Indiana Avenue Drains	1,676.80	
Kinzie Street Drains	609.00	
	$2,059,025.93	$2,059,025.93

SEWERAGE FUND.

STATEMENT of the Cash Receipts by the Board of Public Works from April 1, 1867, to March 31, 1868, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time.

RECEIPTS.

Proceeds of 359 seven per cent. bonds sold	$341,590.16	
Received from sewerage tax of 1867	178,445.45	
Received from sewerage tax of 1866	9,148.79	
Received from temporary loans	101,000.00	
Received from permits issued	16,545.70	
Received from materials sold	5,291.54	
Received from labor	1,067.76	
Received from licenses	32.00	
Received from voucher canceled	9.80	
	$653,131.20	
Balance in hands of City Treasurer, April 1st, 1867	$31,251.68	
Amount due City Treasurer, April 1, 1868,	36,418.40	
	$67,670.08	$720,801.28

EXPENDITURES.

SEWERS—SOUTH DIVISION.

Services of engineers	$2,213.31	
Labor	6,706.36	
Pipe sewer, built by contractor	1,994.85	
Cement	1,212.00	
Brick	733.22	
Raising and lowering pipe and plumbing,	317.65	
Amount credited in error belonging to Water Fund	261.55	
Lumber	192.14	
Horse-keeping	112.13	
Car fares	94.47	
Repairing wagons and tools	51.95	
Tools	21.68	
Amounts carried forward,	$ 13,911.31	

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$13,911.31		
Rent of stable lot.....	20.84		
Rod, target and tape lines.....	18.61		
Pails.....	15,75		
Oil.....	3.00		
Repairing instruments.....	2.25		
Twine.....	2.18		
		$13,973.94	
ADD—			
Expense of sewer on Indiana avevue...	$5,052.28		
" " Twenty-sixth street,	4,096.76		
" " Twenty-first street..	1,919.91		
" " Wabash avenue....	5,494.66		
" " Prairie avenue.....	11,010.06		
" " Archer Road.....	7,166.17		
" " Twenty-third street,	330.25		
" " Michigan avenue...	5,592.17		
" " Calumet avenue....16,706.27			
" " Burnside street.....	1,886.54		
" " Kankakee avenue..	5,460.62		
" " Nineteenth street...	4,958.94		
" " South Clark street..	2,169.10		
" " Eighteenth street...	732.88		
Proportion of discount on bonds sold.....	4,334.70		
Covers used.....	811.25		
Pipes used for catch basins.....	1,113.30		
" " sewers	1,279.20		
" " temporary drain at Tunnel,	327.60		
Depreciation in tools.....	53.30		
	$80,495.96		
DEDUCT—			
Labor for M. S. & N. I. R. R.....$261.55			
Brick on hand April 1st, 1868....1,447.60	1,709 15		
	$78,786.81		$92,760.75
SEWERS—WEST DIVISION.			
Services of Engineers$	1,890.90		
Labor.....	20,882.45		
Brick	3,391.79		
Cement	3,171.16		
Pipe sewers by contractors.....	4,268.07		
Filling Desplaines St. (to be refunded)...	2,646.43		
Lumber.....	217.38		
Amounts carried forward.....	$36,468.18	$13,973.94	$92,760.75

		Cash Payment.	True O
Amounts brought forward,.....	$36,468.18	$13,073.94	$92,76
Filling Fourth St. (to be refunded).....	193.50		
Filling W. 12th St. " "	150.29		
Repairing gas pipe.....	187.75		
Horse keeping.	112.15		
Raising and lowering water pipe and plumbing.....	67.25		
Car fares.....	66.60		
Repairing wagons and tools	51.96		
Sand.....	40.00		
Advertising	36.94		
Water used for puddling.....	36.00		
Pails.....	21.85		
Rod, target and tape lines.....	18.63		
Tools	17.09		
Rent of stable lot	10.42		
Repairing surveying instruments.....	8.50		
Twine	2.19	37,489.30	

ADD—

Expense of sewer on Van Buren street..	$ 9,044.28		
" " Chicago avenue....	17,428.42		
" " Green street.....	1,691.28		
" " Morgan street	2,701.42		
" " Reuben street	1,799.09		
" " Peoria street	3,080.20		
" " Leavitt street.....	1,051.35		
" " Milwaukee ave	2,573.11		
" " Taylor street	20,800.72		
" " Maxwell street.....	8,801.83		
" " Mitchell street.....	60.00		
" " Adams street	2,735.27		
" " W. Madison street.	38,695.58		
" " Sheldon street.....	1,388.10		
" " Desplaines street...	1,409.00		
" " Halsted street	12,372.57		
" " Sixteenth street....	2,408.35		
" " Twelfth street	8,374.94		
" " Lake street.....	6,482.44		
" " Union street.....	2,030.45		
" " Clinton street.....	7,417.35		
" " Jefferson street	7,802.15		
" " W. Indiana st.....	9,381.26		
" " Paulina street.....	9.25		
Amounts carried forward,.....	$176,138.41	$51,463.24	$92,76

			Cash Payment.	True Cost.
Amounts brought forward,.....		$176,138.41	$51,463.24	$92,760.75
Expense of sewer on Laflin street.....		1,838.00		
" " Blue Island avenue.		6,159.17		
" " West 18th street...		985.31		
Proportion of discount on bonds sold....		11,173.91		
Covers used		2,058.00		
Pipe used for catch basins		2,744.00		
" " sewers		5,092.80		
Depreciation in tools.....		53.30		
		$206,242.90		
DEDUCT—				
Brick on hand.....	$3,743.40			
Damages to gas pipe.....	20.00			
Cement.....	4.50	3,767.90		
		$202.475.00		239,964 30
SEWERS—NORTH DIVISION.				
Services of Engineers.....$		1.740.79		
Labor		12,724.52		
Brick		1,152.52		
Cement.....		1,211.37		
Bremer street pipe sewer.....		337.50		
Lumber		179.52		
Raising and lowering pipe and plumbing,		100.40		
Horse keeping.....		112.12		
Tools		21.68		
Car fares		62.08		
Repairing wagons and tools.....		51.94		
Water used for puddling		36.00		
Rod, target and tape lines.....		18.61		
Pails		15.75		
Twine		2.18		
Oil		1.75		
			17,768.73	
ADD—				
Expense of sewer on Division street...$		1,410.45		
" " North Clark st...		23,678.57		
" " Oak street.....		2,777.09		
" " Chestnut street...		315.56		
" " North avenue....		16,785.54		
" " Whiting street ...		1,223.93		
" " Schiller street....		3,112.37		
" " Goethe street.....		1,353.38		
" " Elm street.....		1,894.35		
" " Maple street.....		2,452.25		
Amounts carried forward,.....		$55,003.49	$69,231.97	$332,725.05

		Cash Payment.	True Cost
Amounts brought forward,.....	$55,008.49	$69,231.97	$332,725.
Expense of sewer on Hinsdale street...	1,565.38		
" " Burton Place.....	1,634.87		
Proportion of discount on bonds sold....	3,901.23		
Covers used.....	741.75		
Pipes used for catch basins.....	729.60		
" " sewers.....	3,940.86		
Depreciation in tools.....	53.30		
	$67,570.48		
DEDUCT			
Brick on hand, April 1, '68....$1,309.00			
Labor at White st. chapel.... 24.75	1,333.75		
	$66,236.73		84,005.
CLEANSING SEWERS—SOUTH DIVISION.			
Labor.....$	10,329.08		
Water used for flushing.....	311.32		
Repairing wagons and tools	105.60		
Candles and oil.....	19.33		
Rubber goods	10.50		
Car fares.....	8.50		
Couplings and fittings.....	6.92		
Pails.....	6.92		
Hoes.....	6.50		
Salt.....	3.00		
		10,807.67	
ADD—			
Depreciation in tools$	53.30		
DEDUCT—			
Labor for Duffy & McNichols..$148.23			
Labor for U. H. Crosby..... 20.00	168.23		
	$114.93		10,692.7
CLEANSING SEWERS—WEST DIVISION.			
Labor.....$	9,296.65		
Water used for flushing.....	311.32		
Repairing wagons and tools.....	105.64		
Oil and candles.....	16.49		
Rubber goods.....	10.51		
Car fares	8.50		
Couplings and fittings	6.93		
Pails	6.92		
Rope	5.75		
		9,768.71	
ADD—			
Depreciation in tools	53.30		9.822.0
Amounts carried forward, ...		$89,808.85	$437,245.9

		Cash Payment.	*True Cost.*
Amounts brought forward, ...		$89,808.35	$437,245.26
CLEANING SEWERS—NORTH DIVISION.			
Labor	$ 5.516.96		
Water used for flushing	311.31		
Repairing wagons and tools	105.59		
Rubber goods	10.49		
Car fares	8.50		
Couplings and fittings	6.92		
Pails	6.91		
Salt	3.00		
Oil	3.08		
		5,972.76	
ADD—			
Depreciation in tools	$53.30		6,026.06
REPAIRS OF SEWERS—SOUTH DIVISION.			
Labor	$ 2,139.62		
Inspecting	15.00		
Cement	195.05		
Filling to protect South LaSalle street sewer at dock	70.00		
Clay	10.00		
Rubber goods	8.00		
Repairing tools	15.90		
		2,453.57	2,453.57
REPAIRS OF SEWERS—WEST DIVISION.			
Labor	$ 2,168.51		
Cement	281.67		
Repairing tools	15.90		
		2,466.08	2,466.08
REPAIRS OF SEWERS—NORTH DIVISION.			
Labor	$ 3,802.95		
Inspecting	15.00		
Cement	747.93		
Filling to protect North LaSalle street sewer at dock	70.00		
Clay	10.00		
Repairing tools	15.89		
		4,661.77	4,661.77
SEWERAGE BRICK.			
Brick paid for and used by other departments—whole amount refunded		3,170.50	
HOUSE DRAINS.			
Draughtsman	1,200.00		
Permit clerk	940.00		
Inspectors	2,876.25		
Labor setting junctions	121.33		
Advertising	439.31		
Amounts carried forward, ...	$5,576.89	$108,533.03	$452,852.74

		Cash Payment.	True Cost
Amounts brought forward,	$ 5,576.89	$108,533.08	$452,852.
Car fares	67.10		
Tax erroneously paid refunded	27.50		
Printing blanks	21.50		
Mounting and binding maps	30.00		
Repairing gas pipe	10.00		
Drawing materials	5.50		
Miscellaneous	6.40		
		5,744.89	
ADD—			
Pipe junctions set	$ 5,445.92		
DEDUCT—			
Received for permits issued	16,550.70		
	$11,104.78		
SEWERAGE PIPE.			
Amount paid for pipe	$ 19,620.00		
Labor	387.25		
Advertising for proposals	79.43		
		20,086.68	
SEWERAGE STOCK.			
Lumber for sheeting	$ 469.77		
Two dirt carts	300.00		
Water box	160.60		
Tools	135.55		
Wheelbarrows	30.00		
		1,095.92	
MAN HOLE AND CATCH BASIN SEWERS.			
Labor	$ 3,468.35		
Lumber	4,100.84		
Nails and spikes	817.75		
Tar	175.00		
Twine and Oakum	22.38		
Bolts and screws	8.12		
		8,592.44	
DEDUCT—			
Covers used for sewers and repairs	$ 6,108.50		
Covers sold	223.50		
	$6,332.00		
ADD—			
Depreciation in tools	53.32		
	$6,278.68	———	2,313.7
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners	$ 2,670.00		
Salary of Secretary	933.32		
" City Engineer	1,500.00		
Amounts carried forward,	$5,103.32	$144,052.96	$455,166.5

		Cash Payment.	*True Cost.*
Amounts brought forward,.....$	5,103.32	$144,052.96	$455,166.50
of Book keeper and assistant.....	1,066.64		
Sup't and ass't engineer.....	1,548.32		
Clerks.....	2,802.51		
Draughtsmen	700.00		
Messenger, janitor and watchman	834.00		
books and stationery	421.06		
ng.....	142.17		
ving bonds.....	182.25		
tising...	175.87		
rent.....	2,124.53		
.....	70.00		
ue and postage stamps.....	80.33		
and papers	41.42		
ture.....	384.24		
.....	258.23		
rs.....	125.41		
se of sale of bonds.....	124.94		
ss charges and telegrams on bonds.	155.29		
gs.....	71.66		
, keys and hardware	50.84		
ng, graining and varnishing	74.16		
t, matting, paper and curtains.....	70.44		
xtures and fitting	75.08		
ng offices and towels.....	61.84		
.....	45.01		
n book	35.00		
.....	22.33		
f stable lot.....	10.42		
g and repairing stoves.....	29.85		
ring surveying instruments.....	12.75		
a hole boxes.....	19.76		
cling front of office	15.00		
ier strips	10.47		
oing.....	8.72		
llaneous.....	118.03		
		17,071.89	
CT—			
eived for licenses	$32.00		17,039.89
SEWERAGE INTEREST.			
st on sewerage loan bonds, July 1,			
, and January 1, 1868$	105,110.00		
st paid in Chicago	579.44		
st on temporary loans.....	2,002.69		
issions paid Am. Exc. Nat'l Bank..	262.78		
		107,954.91	107,954.91
Amounts carried forward,.....		$269,079.76	$580,161.30

		Cash Payment.	True Cost.
Amounts brought forward,.....		$269,079.76	$580,161.1
Division st. sewer, 410 feet 2 feet sewer—			
T. J. Clark, constructing sewer.....$	1,025.00		
" extras on same	29.25		
Inspecting	67.20		
Labor	4.50		
Brick.....	266.50		
		1,392.45	
ADD—			
Covers used.....$18.00			
North Clark st. sewer, 2,632 ft. 5 ft. sewer—			
Haines & Hallinin, constructing 1,252			
feet sewer.....$	8,138.00		
Haines & Hallinin, extras.....	298.35		
McCabe, Ryan & Co., constructing 1,380			
feet sewer	6,141.00		
McCabe, Ryan & Co., extras	246.00		
Brick.....	7,906.13		
Inspecting	376.00		
Labor	319.38		
Plumbing.....	141.06		
		23,566.52	
ADD—			
Covers used$74.25			
Pipe used 37.80			
	112.05		
Indiana ave. sewer, 1,331 ft. 2½ ft. sewer—			
Duffy & McNicols, constructing sewer..	3,933.00		
Duffy & McNichols, extras.....	200.50		
Inspecting	110.00		
Labor	64.75		
Brick.....	610.53		
		4,978.78	
ADD—			
Covers used.....$60.00			
Pipe used 13.50	$73.50		
Mitchell street sewer		60.00	
Van Buren street sewer, 1,330¼ ft. 4½ ft.			
sewer—Mulany & Duffy, constructing			
sewer$	4,615.97		
Mulany & Duffy, extras.....	53.50		
Brick.....	3,977.44		
Inspecting	171.00		
Labor	166.37		
		8,984.28	
Amounts carried forward,.....		$308,061.79	$580,161.8

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$308,061.79	580,161.30
ADD—			
Covers used$33.00			
Pipe used 27.00			
	60.00		
Oak st. sewer, 1,478 feet 2 feet sewer—			
Haines & Hallinin, constructing 665 ft. sewer$	1,596.00		
Haines & Hallinin, extras	46.12		
McCabe, Ryan & Co., constructing 813 ft. sewer.....	586.72		
McCabe, Ryan & Co., extras	15.00		
Inspecting	50.00		
Brick.....	432.25		
		2,726.09	
ADD—			
Covers used$24.00			
Pipes used..... 27.00			
	51.00		
Chestnut st. sewer, 343 feet 2 feet sewer—			
McCabe, Ryan & Co., constructing sewer		315.56	
Twenty-sixth street sewer, 421 feet 3 feet sewer—T. H. Dufly, constructing sewer.$	2,273.40		
Brick	1,667.23		
Inspecting	107.25		
Labor	21.88		
		4,069.76	
ADD—			
Covers used$18.00			
Pipe used 9.00	$27.00		
Chicago avenue sewer, 2,662 ft. 4 ft. sewer—			
Woodruff & Raffin, constructing sewer.$	9,982.50		
Brick.....	6,748.17		
Inspecting	206.00		
Labor	332.00		
Cement.....	18.00		
		17,286.67	
ADD—			
Covers used.....$74.25			
Pipe used..... 67.50	$141.75		
Green st. sewer, 469 ft. 2 ft. sewer—Woodruff & Raffin, constructing sewer..... ..	1,228.78		
do extras.....	31.50		
Brick.....	357.50		
Inspecting	36.00		
		1,653.78	
Amounts carried forward,.....		$334,113.65	$580,161.30

		Cash Payment.	True Cost.
Amounts brought forward,.....		$334,113.65	$580.161.3
ADD—			
Covers used.....$24.00			
Pipe used..... 13.50			
	37.50		
Morgan street sewer, 435 feet 2 ft. sewer—			
Mulany & Duffy, balance for work in '66.$	1,224.50		
do extras.....	6.47		
Woodruff & Raffin, constructing 435 ft....	1,139.70		
Brick	282.75		
Inspecting	80.00		
		2,683.42	
ADD—			
Covers used.....	18.00		
Twenty-first street sewer, 872½ feet 2 feet			
sewer—M. Mulany, constructing sewer.$	1,134.25		
Brick.....	597.12		
Inspecting.....	54.00		
Plumbing.....	32.54		
		1,817.91	
ADD—			
Covers used.....$48.00			
Pipe used..... 54.00			
	102.00		
Reuben street sewer, 454 feet 2 ft. sewer—			
Mulany & Duffy, balance on work done			
in 1866$	337.50		
do extras.....	56		
Woodruff & Raffin constructing sewers...	1,021.50		
do extras.....	25.31		
Brick	295.10		
Inspecting	40.00		
Labor	52.12		
		1,772.09	
ADD—			
Covers used.....$18.00			
Pipe used..... 9.00			
	27.00		
Peoria street sewer, 938 feet 2 feet sewer—			
Woodruff & Raffin, constructing sewer.$	2,345.00		
Brick.....	609.70		
Inspecting.....	66.00		
Labor.....	13.50		
		3,034.20	
Amounts carried forward,.....		$343,421.27	$580,161.3

		Cash Payment.	*True Cost.*
Amount brought forward,.....		$343,421.27	$580,161.30
ADD—			
Covers used.....$36.00			
Pipe used 10.00	46.00		
Wabash av. sewer, 671 ft. 2½ ft. and 640 ft. 2 ft. sewer—John Clark, constructing 2½ feet sewer$	2,281.40		
John Clark, constructing 2 feet sewer....	2,048.00		
do extras.....	30.38		
Brick for 2½ feet sewer.....	533.38		
" " 2 " "	416.00		
Inspecting	100.00		
Labor	13.50		
		5,422.66	
ADD—			
Covers used.....$54.00			
Pipe used 18.00	72.00		
North av. sewer, 1,317 feet 4 ft. and 1,065 ft. 3 ft. sewer—T. J. Clark, constructing 4 ft. sewer$	5,992.35		
T. J. Clark, constructing 3 feet sewer ...	4,526.25		
do extra labor and materials ...	211.40		
Brick for 4 feet sewer	3,338.59		
" " 3 " "	2,076.75		
Inspecting	230.00		
Labor	259.00		
		16,634.34	
ADD—			
Covers used$81.00			
Pipe used..... 70.20	151.20		
Prairie avenue sewer, 2,018 ft. 2½ feet and 648 2-10 feet 2 feet sewer—Duffy & McNichols, balance on work of 1866.....$	691.65		
Duffy & McNichols, constructing 2 ft. sewer	1,296.40		
do extras....	70.00		
John Clark, 680 feet 2½ feet sewer	2,278.00		
do extras.....	90.56		
Thos. H. Duffy, constructing 1,338 feet 2½ sewer	4,014.00		
Thos. H. Duffy, extras	150.75		
Brick for 2½ feet sewer.....	1,571.00		
" " 2 " "	421.20		
Amounts carried forward,.....	$10,583.56	$365,478.27	$580,161.30

		Cash Payment.	True Cost.
Amounts brought forward,.....	$ 10,583.56	$365,478.27	$580,161.3
Inspecting.....	207.50		
Labor.....	73.50		
		10,864.56	
ADD—			
Covers used.....$114.00			
Pipe used 31.50	145.50		
Milwaukee avenue sewer, 384 feet 4½ feet sewer—Woodruff & Raffin, constructing sewer.....$	1,344.00		
Brick.....	1,148.16		
Inspecting	40.00		
Labor.....	30.00	2,562.16	
ADD—			
Covers used.....$8.25			
Pipe used 2.70	$10.95		
Taylor st. sewer, 1,175 feet 4½ ft. sewer—Langan & McHugh, balance on contract of 1866$	5,096.62		
Langan & McHugh, extras.....	140.11		
Woodruff & Raffin, constructing 1,175 feet 4½ feet.....	4,406.25		
Woodruff & Raffin, extras	5.62		
" on account of 2,152½ feet 4½ feet.....	5,655.00		
Brick.....	9,949.22		
Inspecting.....	514.50		
Labor	654.02		
Plumbing.....	123.33	26,544.67	
ADD—			
Covers used.....$123.75			
Pipe used 132.30	$256.05		
Maxwell st. sewer, 1,294 ft. 5 ft. sewer—Woodruff & Raffin, constructing sewer.$	4,205.50		
Woodruff & Raffin, extras.....	11.25		
Brick.....	4,373.78		
Inspecting	38.00		
Labor	110.75	8,739.28	
Amounts carried forward,.....		$414,188.94	$580,161.30

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$414,188.94	$580,161.30
ADD—			
Covers used..... ..$24.75			
Pipe used 34.80	$59.55		
Whiting street sewer, 438 ft. 2 ft. sewer—			
T. J. Clark, constructing sewer.....$	876.00		
T. J. Clark, extras.....	2.25		
Brick.....	284.70		
Inspecting	16.00		
Plumbing.....	4.48	1,183.43	
ADD—			
Covers used.....$18.00			
Pipe used 22.50	$40.50		
Archer Road sewer, 1,031 2-10 ft. 4 ft.			
sewer—M. Mulany, constructing sewer.$	4,124.80		
M. Mulany, extras.....	142.50		
Brick.....	2,613.58		
Inspecting..	66.00		
Labor	115.38		
Plumbing.....	42.41		
		7,104.67	
ADD—			
Covers used.....$41.25			
Pipe used 20.25	61.50		
Twenty-third st. sewer, 82 ft. 2 ft. sewer—			
John Clark, constructing sewer.....$	274.70		
Brick.....	53.30		
		328.00	
ADD—			
Pipe used$2.25			
Michigan ave. sewer, 1,347 ft. 2½ ft. sewer—			
T. H. Duffy, constructing sewer.....$	4,175.70		
" extras.....	165.81		
Brick.....	1,050.66		
Inspecting	81.00		
Labor	41.00		
		5,514.17	
ADD—			
Covers used.....$60.00			
Pipe used 18.00	78.00		
Amounts carried forward, ...		$428,319.21	$580,161.30

		Cash Payment.	True Cost.
Amounts brought forward.....		$428,319.21	$580,161.1
Calumet Ave. sewer, 2,706 2-10 feet 2½ feet and 1,295 7-10 ft. 2 ft. sewer—John Clark, constructing 2 ft. sewer..... ...$	4,146.24		
John Clark, constructing 687 7-10 ft. 2½ ft. sewer	2,235.02		
John Clark, extras	149.62		
T. H. Duffy, constructing 1,353 feet 2½ ft. sewer.....	4,059.00		
T. H. Duffy, extras	149.13		
Duffy & McNichols, constructing 665 5-10 ft. 2½ ft. sewer....	1,996.50		
Duffy & McNichols, extras.....	224.25		
Brick for 2½ feet sewer..... ..	2,110.68		
Brick for 2 feet sewer.....	842.40		
Inspecting	423.75		
Labor	148.43		
		16,485.02	
ADD—			
Covers used...$174.00			
Pipe used 47.25	221.25		
Leavitt street sewer, 650 feet 2 ft. sewer—			
Mulany & Duffy, constructing sewer...$	1,105.00		
" extras	11.25		
Brick.....	422.50		
Inspecting	21.00		
Labor.....	34.60		
		1.594.35	
ADD—			
Covers used.....$30.00			
Pipe used..... 27.00			
	57.00		
Burnside street sewer, 916½ ft. 2 ft. sewer—			
M. Mulany, constructing sewer.....$	1,145.62		
" extras.....	13.75		
Brick.....	595.72		
Plumbing.....	56.45		
		1,811.54	
ADD—			
Covers used.....$48.00			
Pipe used 27.00			
	75.00		
Kankakee avenue sewer, 1,335 feet 2½ ft. and 18 feet 2 feet sewer—T. H. Duffy, constructing 2½ feet sewer.....$	4,005.00		
Amounts carried forward.....	$4,005.00	$448,210.12	$580,161.3

		Cash Payment.	True Cost.
Amounts brought forward,.....$	4,005.00	$448,210.12	$580,161.80
T. H. Duffy, constructing 2 feet sewer....	54.00		
" extras.....	149.62		
Brick for 2½ feet sewer.....	1,040.30		
" " 2 " "	11.70		
Inspecting	81.00		
Labor.....	41.00		
		5,382.62	
ADD—			
Covers used....$60.00			
Pipe used 18.00	78.00		
Nineteenth st. sewer, 255 feet 3 ft. sewer— and 1,531 ft. 2½ feet sewer— M. Mulany, constructing 3 feet sewer.....$	765.00		
M. Mulany, constructing 2½ feet sewer...	2,143.40		
Brick for 3 feet sewer.....	497.25		
" " 2½ " "	1,194.18		
Inspecting	54.00		
Labor	82.00		
Plumbing.....	49.86		
		4,785.69	
ADD—			
Covers used$90.00			
Pipe used 83.25	173.25		
Adams street sewer, 365 feet 4½ ft. sewer—			
Woodruff & Raffin, constructing sewer.$	1,551.25		
" extras	7.87		
Brick.....	1,091.35		
Labor	65.75		
		2,716.22	
ADD—			
Covers used.....$ 8.25			
Pipe used 10.80	19.05		
Sheldon street sewer, 499 feet 2 ft. sewer—			
Woodruff & Raffin, constructing sewer..$	998.00		
" extras.....	2.25		
Brick.....	324 35		
Inspecting	38.00		
		1,362.60	
ADD—			
Covers used.....$12.00			
Pipe used 13.50	25.50		
Amounts carried forward,.....		$462,457.25	$580,161.80

		Cash Payment.	True Cost.
Amounts brought forward,.....		$462,457.25	$580,161.1
West Madison street sewer, 1,991 ft. 4½ ft. and 2,661½ feet 4 ft. sewer—Woodruff & Raffin, constructing 4½ feet sewer.....$	12,324.29		
Woodruff & Raffin, extras on the same.....	131.06		
" constructing 4 ft. sewer	12,642.12		
" extras on " "	65.25		
Brick for 4½ feet sewer.....	5,953.09		
" " 4 " "	6,746.90		
Inspecting.....	240.50		
Labor	339.50		
Plumbing.....	29.22		
		38,471.93	
ADD—			
Covers used.....$123.75			
Pipe used..... 99.90	223.65		
Desplaines st. sewer, 785 feet 2 ft. sewer—			
Woodruff & Raffin, constructing sewer.$	785.00		
Brick.....	510.25		
Inspecting.....	12.00		
Labor	43.25		
		1,350.50	
Sixteenth st. sewer, 523 feet 3 feet sewer,			
Woodruff & Raffin, constructing sewer.$	1,307.50		
" extras.....	6.75		
Brick.....	1,019.85		
Labor	36.75		
		2,370.85	
ADD—			
Covers used.....$24.00			
Pipe used 13.50	37.50		
Halsted st. sewer, 5,398 ft. 2 ft. sewer—			
Woodruff & Raffin, constructing sewer..$	8,178.25		
" extras	4.50		
Brick.....	3,508.70		
Inspecting.....	210.00		
Labor	84.87		
		11,986.32	
ADD—			
Covers used$258.00			
Pipe used 128.25	386.25		
Twelfth st. sewer, 1,348 ft. 4½ ft. sewer—			
Woodruff & Raffin, constructing sewer...$	4,212.50		
Amounts carried forward,.....	$4,212.50	$516,636.85	$580,161.9

		Cash Payment.	True Cost
Amounts brought forward,.....	$4,212.50	$516,636.85	$580.161.30
Brick.....	4,030.28		
Plumbing.....	47.59		
Labor	21.87		
		8,312.24	
ADD—			
Covers used.....$33.00			
Pipe used 29.70	62.70		
Schiller st. sewer, 842 ft. 2 ft. sewer—T. J. Clark, constructing 404 ft. sewer.....$	1,010.00		
T. J. Clark, extras.....	298.75		
McCabe, Ryan & Co., constructing,438 feet sewer.....	985.50		
McCabe, Ryan & Co., extras....	39.37		
Brick.....	579.15		
Inspecting	123.60		
Labor	4.50		
		3,040.87	
ADD—			
Covers used$36.00			
Pipe used 35.50	71.50		
Goethe st. sewer, 430 feet 2 feet sewer— McCabe, Ryan & Co., constructing sewer$	967.50		
McCabe, Ryan & Co., extras.....	39.38		
Brick.....	273.00		
Inspecting.....	24.00		
Labor	4.50		
Plumbing.....	9.00		
		1,817.38	
ADD—			
Covers used.....$18.00			
Pipe used 18.00	36.00		
Elm st. sewer, 629 ft. 2 ft. sewer—Haines & Hallinin, constructing sewer.....$	1,397.25		
Haines & Hallinan, extras	37.25		
Brick.....	408.85		
Labor	9.00		
		1,852.35	
ADD—			
Covers used.....$24.00			
Pipe used 18.00	42.00		
Amounts carried forward, ...		$531,159.69	$580,161.30

		Cash Payment.	True Cost.
Amounts brought forward,.....		$581,159.69	$580,161.3
Maple st. sewer, 755 ft. 2 ft. sewer—Haines & Hallinin, constructing sewer.....$	1,758.75		
Haines & Hallinan, extras.....	78.50		
Brick.....	492.75		
Labor.....	65.25		
		2,395.25	
ADD—			
Covers used.....$30.00			
Pipe used 27.00	57.00		
West Lake st. sewer, 666 ft. 4 ft. sewer—			
Duffy & Brophy, constructing sewer...$	3,982.68		
" extras.....	18.00		
Brick.....	1,688.31		
Labor.....	703.75		
Inspecting.....	57.00		
		6,449.74	
ADD—			
Covers used.....$16.50			
Pipe used 16.20	32.70		
Union street sewer, 873 ft. 2 ft. sewer—			
Woodruff & Raffin, constructing sewer.$	1,309.50		
" extras	43.00		
Brick.....	567.45		
Inspecting	34.00		
Labor.....	13.50		
		1,967.45	
ADD—			
Covers used.....$36.00			
Pipe used 27.00	63.00		
Hinsdale st. sewer, 509 ft. 2 ft. sewer—T. J. Clark, constructing sewer.....$	1,145.25		
Brick.....	330.85		
Labor.....	50.00		
Plumbing.....	6.28		
		1,532.38	
ADD—			
Covers used$24.00			
Pipe used 9.00	33.00		
Clinton street sewer, 2,765 ft. 2 ft. sewer—			
Woodruff & Raffin, constructing sewer.$	4,838.75		
" extras.....	172.00		
Brick.....	1,797.25		
Amounts carried forward, ...	$6,808.00	$543,504.51	$580,161.

		Cash Payment.	*True Cost.*
Amounts brought forword	$6,808.00	$543.504.51	$580,161.30
Repairing gas pipe.....	283.05		
Inspecting	93.00		
Labor	49.50		
Plumbing.....	18.80		
		7,252.35	
ADD—			
Covers used.....$102.00			
Pipe used 63.00	165.00		
Jefferson st. sewer, 2,766 feet 2 ft. sewer—			
Woodruff & Raffin, constructing sewer.$	5,532.00		
" extras.....	20.25		
Brick.....	1,797.90		
Inspecting	224.00		
Labor.....	49.50		
		7,623.65	
ADD—			
Covers used.....$102.00			
Pipe used 76.50	178.50		
West Indiana street sewer, 1,329 feet 4 feet sewer—W. Woodruff, balance due on			
contract of 1866.....$	290.00		
Woodruff & Raffin, constructing sewer ...	5,316.00		
" extras	4.50		
Brick	3,379.01		
Inspecting.....	167.00		
Labor.....	161.75		
		9,321.26	
ADD—			
Covers used.....$33.00			
Pipe used 27.00	60.00		
South Clark st. sewer, 919 ft. 2 ft. sewer—			
M. Mulany, constructing sewer.....$	1,378.50		
" extras.....	18.25		
Brick	597.35		
Inspecting.....	100.00		
		2,094.10	
ADD—			
Covers used.....$48.00			
Pipe used..... 27.00	75.00		
Paulina street sewer—			
Labor.....		9.25	
Amounts carried forward,.....		$569,805.12	$580.161.30

			Cash Payment.	*True Cost.*
Amounts brought forward			$569,805.12	$580,161.3
Laflin steet sewer, 490 feet 2 feet sewer—				
C. W. Fuller, constructing sewer.....$		1,479.00		
Brick		318.50		
			1,797.50	
ADD—				
Covers used.....$18.00				
Pipe used..... 22.50		40.50		
Burton Place Sewer, 407 feet 2 ft. sewer—				
P. D. Betticher, constructing sewer....$		1,133.52		
Brick.....		264.55		
Cement		101.30		
Inspecting.....		94.20		
Repairing gas pipe		19.60		
			1,613.17	
ADD—				
Covers used$18.00				
Pipe used..... 13.50				
	31.50			
DEDUCT—				
Refunded for repairing gas pipe	9.80	21.70		
Blue Island av. sewer, 2,272 ft. 2 ft. sewer—				
Woodruff & Raffin, constructing sewer.$		3,976.00		
" extras.....		167.62		
Brick.....		1,476.80		
Inspecting		337.00		
Labor.....		57.00		
			6,014.42	
ADD—				
Covers used.....$102.00				
Pipe used..... 42.75		144.75		
West Eighteenth street sewer—				
Labor			968.81	
ADD—				
Covers used.....$16.50				
Eighteenth street sewer—				
Labor			726.88	
ADD—				
Covers used.....$6.00				
Filling North Market st.—Stewart, Ludlam & Co., filling.....$		234.00		
Kostens & Deitman, filling.....		284.80		
Labor.....		94.92		
Amounts carried forward		$613.72	$580,925.90	$580,161.30

		Cash Payment.	*True Cost.*
Amounts brought forward.....	$613.72	$580,925.90	$580,151.30
Inspecting	42.00		
Advertising	15.50		
		671.22	
Filling Harrison, Polk and Taylor streets—			
Stewart, Ludlam & Co., filling	252.80		
Labor by city.....	60.00		
		312.80	312.80
Michigan ave. drains—Woodruff & Raffin,			
constructing drains.....$	3,176.74		
Repairing gas pipe.....	67.76		
		3,244.50	3,244.50
Chicago avenue drains—B. Langan, con-			
structing drains.....		350.60	350.60
Milwaukee avenue drains—John Duffy,			
constructing drains.....		1,494.74	1,494.74
Market street drains—W. M. Dee, con-			
structing drains.....		972.53	
DEDUCT—			
Amount received from Chicago Gas Co.$	145.92		826.61
Halsted street drains—John Duffy, con-			
structing drains	376.00		
E. McGrath, constructing drains.....	196.00		
		572.00	
DEDUCT—			
Amount received from J. F. Smith.....	$38.50		533.50
North Clark street drains—C. W. Fuller,			
constructing drain.....		982.40	
DEDUCT—			
Amount received from S. Witkowsky..	$63.50		918.90
Clark street drains—W. M. Dee, con-			
structing drains		1,029.07	1,029.07
ndiana ave. drains—Chas. Birkenshaw,			
constructing drains....	$886.40		
Bryan O'Neil, constructing drains.....	790.40		
		1,676.80	1,676.80
Kinzie street drains—John McHugh, con-			
structing drains		609.00	609.00
Wabash ave. drains—James McKenney,			
constructing drains.....		105.00	105.00
MISCELLANEOUS.			
Temporary loans paid.....		101,000.00	101,000.00
Paid to Sewerage Sinking Fund for its			
proportion of tax of 1866.....		23,301.90	23,301.90
Amount carried forward.....		$717,248.46	$715,564.72

		Cash Payment.	*True Cost.*
Amounts brought forward.....		$717,248.46	$715,564.72
Paid to River Improvement Fund for its proportion of tax of 1866....		3,883.65	3,883.65
Labor for Woodruff & Raffin, contractors.		72.00	72.00
		$721,204.11	$719,520.37
Deduct from "cash payment" column.			
Duffy & McNichols, cleansing sewer$148.23			
Duffy & McNichols, paid in 1866. 67.50			
Haines & Hallinin, sheeting.... 105.80			
McCabe, Ryan & Co., " 81.30	$402.83	402.83	
Total cash expenditures....		$720,801.28	$719,520.37

Sewerage Sinking Fund.

RECEIPTS.

Proportion of Sewerage Tax of 1866.....	$23,301.90	
Balance in hands of City Treasurer, April 1, 1867.....	902.47	$24,204.37

EXPENDITURES.

Twenty-one bonds purchased and cancelled, Nos. 1,045, to 1,049 inc., 1,163 to 1,168 inc., 1,777 to 1,781 inc., and 1,829 to 1,838, inclusive.....	$20,089.72	
Balance in hands of City Treasurer, April 1, 1868.....	4,114.65	$24,204.37

River Improvement Department.

Trial Balance, Ledger, Board of Public Works, March 31, 1868.

	Dr.	Cr.
River Improvement Fund (amount due Treasurer)....		$ 26,508.47
Expenses of Survey previous to adoption of plan.....$	1,269.23	
W. Kimball, Comptroller, Bond acct.—Bonds unsold..	50,000.00	
American Exchange National Bank—Coupon account..	16,415.00	
Expenses of Illinois and Michigan Canal Survey.....	17,823.92	
River Improvement Salaries.....	18,750.00	
River Improvement Office Expenses.....	1,490.18	
C. B. Kimball & Co., Contractors.....	24,650.00	
Sanger, Steele & Co., Contractors.....	62,292.59	
Fox, Howard & Walker, Contractors—old contract....	98,649.95	
River Improvement Bonds, 7 per cent.....		500,000.00
Discount on River Improvement Bonds.....	20,827.47	
River Improvement Loan Interest.....	8,336.10	
River Improvement—Miscellaneous Expenses.....	31,445.12	
Fox, Howard & Walker, Contractors—new contract..	44,333.03	
Hosch & Harroon, Contractors.....	1,168.75	
C. E. Boyer, Contractor.....	74,715.00	
Hosch & Van Slyck, Contractors.....	15,028.00	
S. W. Norton, Contractor.....	16,269.78	
Lee & Graham, Contractors.....	9,626.25	
J. A. Hendricks & Co., Contractors.....	17,301.75	
River Improvement Sinking Fund.....		3,883.65
	$530,392.12	$530,392.12

River Improvement Fund.

Statement of the Cash Receipts by the Board of Public Works from April 1, 1867, to March 31, 1868, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds of 287 River Improvement Bonds sold	$274,503.42	
Proportion of Sewerage Tax of 1866 for Sinking Fund.	3,883.65	
	$278,387.07	
Balance on hand April 1, 1867	5,394.10	
Amount due City Treasurer April 1, 1868	26,508.47	$310,289.64

EXPENDITURES.

		Cash Payment.	*True Cost.*
INTEREST.			
Interest on river loan bonds, July 1, 1867, and January 1, 1868	$ 16,415.00		
Commissions paid American Exchange National Bank	41.03		
Interest on advance on bonds	49.20		
		16,505.23	16,505.23
EXPENSES OF SURVEY.			
Salary of engineers	$ 2,300.00		
Rodmen	1,849.00		
Use of horse	105.00		
Refreshments	80.00		
Repairing boat	29.50		
Towing boat	27.20		
Estimates	19.00		
Chain	16.00		
Miscellaneous	9.05		
		4,434.75	4,434.75
SALARIES AND OFFICE EXPENSES.			
Salaries of Commissioners	6,000.00		
Rent of office	80.00		
Coal oil, chimnies and wick	27.17		
		6,107.17	6,107.17
Amounts carried forward		$27,047.15	$27,047.15

Amounts brought forward.....		$27,047.15	$27,047.15
MISCELLANEOUS EXPENSES.			
On account of pumping at Bridgeport....	$ 15,000.00		
Advertising.....	697.12		
Expense of sale, express charges and telegrams on bonds.....	187.91		
Engraving bonds.....	94.50		
Blank contracts and proposals.....	64.00		
Appraising machinery.....	50.00		
Blank estimates	12.00		
Miscellaneous.....	13.90		
		16,069.43	16,069.43
CONTRACTS.			
Fox, Howard & Walker, on old contract..	$ 64,080.50		
" on new " ..	44,333.03		
C. B. Kimball & Co., on contract.....	24,650.00		
Hosch & Harroon, "	1,168.75		
C. E. Boyer, "	74,715.00		
Hosch & Van Slyck, "	15,028.00		
S. W. Norton, "	16,269.78		
Lee & Graham, "	9,626.25		
J. A. Hendricks & Co., "	17,301.75		
		267,173.06	267,173.06
Total expenditures		$310,289.64	$310,289.64

OFFICE OF THE BOARD OF PUBLIC WORKS,
Nos. 15 and 17 Wells St., Chicago, Nov. 18th, 1868.

A. W. TINKHAM, ESQ., *Secretary.*

The following is a statement of taps on hand March 31st, 1868:

½ inch	Taps,	337	1.13	=	$ 380.81
⅝ "	"	285	1.34	=	381.90
¾ "	"	25	2.00	=	50.00
1 "	"	57	4.00	=	228.00
					$1,040.71

Very Respectfully Yours,

O. F. WOODFORD,
Assessor Water Dep't.

OFFICE OF THE BOARD OF PUBLIC WORKS,
Nos. 15 and 17 Wells St., Chicago, Nov. 18th, 1868.

A. W. TINKHAM, ESQ., *Secretary.*

The following is a statement of taps inserted from April 1st, 1867, to April 1st, 1868:

½ inch taps	3,231
⅝ " "	818
¾ " "	225
1 " "	107
Total	4,381

Very respectfully yours,

O. F. WOODFORD,
Assessor Water Dep't.

CITY DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31, 1868.

	DR.	CR.
City Appropriation Fund (amount unexpended)	$178,534.69	
North Division		$ 1,278.23
South Division	24,765.69	
West Division	18,191.32	
North Division Sidewalks		4,021.31
South Division Sidewalks		3,270.26
West Division Sidewalks		5,624.20
Dredging Goose Island		3,797.77
Lake Park		4,132.62
Dearborn Park		1,343.25
Public Parks		15,376.47
Lake Hospital at Chicago Cemetery		1,058.81
Street Lamps—West Division		55.73
Washington Street Tunnel	245.00	
Public Buildings		13,211.82
Chicago Cemetery		6,312.03
Sidewalk west side of Cemetery		156 29
Lumber Account	630.00	
House Moving and Street Permits		5,479.50
City Office Expense Account	24,641.33	
Street Lamps		2,808.05
Public Hydrants		1,000.00
Dredging Main River and South Branch		7,890.22
Dredging North Branch	409.00	
Chicago Harbor		15,322.14
Intersections of streets		90,730.91
North Market	1,519.48	
Straightening North Clark		50.00
Dredging Bar at mouth of Harbor	47,227.49	
Special Appropriation		70,849.05
North Pier Extension	38,440.53	
City Proportional Expense Account		3.104.96
House Numbers		1,474.87
Bridge Department	4,510 66	
Amounts carried forward,	$339,115.19	$259,848.49

	Dr.	Cr.
Amounts brought forward.....	$339,1159.19	$259,848.49
Lake Street Bridge		6,800.00
Polk Street Bridge.....		30,000.00
Twelfth Street Bridge.....		30,000.00
Eighteenth Street Bridge		2,500.00
Kinzie Street Bridge.....		3,000.00
Chicago Avenue Bridge.....	5,159.74	
Adams Street Bridge.....		30,830.00
Dock Line Survey	17,894.72	
Lake Shore Roadway.....	808.84	
Samuel Polkey, Receiving Clerk.....	308.12	
Warrant 480 West.....		308.12
	$363,286.61	$363,286.61

BOARD OF PUBLIC WORKS APPROPRIATION FUND.

STATEMENT of the Cash Receipts by the Board of Public Works from April 1, 1867, to March 31, 1868, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Amount appropriated by Common Council	$652,046.40	
Received from Temporary Loans	126,820.47	
Received from assessments for labor and cost of proceedings	13,375.03	
House Moving and Street Permits	4,878.55	
Constructing sidewalks	5,103.62	
Sand and gravel sold	3,029.35	
Received for labor	1,752.39	
Received for House Numbers	757.50	
Received for paving	587.80	
Received for damages to bridges	310.37	
Chicago & North-Western Railway for its proportion repairing State street Viaduct	766.67	
Received for removing bodies from Chicago Cemetery	149.00	
Received for Lumber	202.67	
Received for Bonds and Licenses	176.45	
Received for Stone	116.04	
Received for Old Iron	70.73	
Received for Lamp Posts	94.00	
Rent of lot opposite Cemetery	80.00	
Miscellaneous	15.00	
	$810,282.04	
Balance in hand of City Treasurer April 1, 1867	102,647.99	$912,930.03

EXPENDITURES.

		Cash Payment.	*True Cost.*
SOUTH DIVISION.			
Labor on streets, crossings and culverts..	$ 56,616.48		
Cleaning streets by contract	11,097.21		
Lumber	9,072,53		
Stone	2,212.50		
Gravel	3,161.58		
Nails and spikes	895.25		
Street composition, 117 barrels	819.00		
Sawing paving blocks	644.57		
Cinders	772.75		
Interest on temporary loans	745.71		
Sprinkling front of Dearborn Park	240.00		
Level	100.00		
Tools	160.55		
Repairing tools	97.35		
Roller	30.00		
Surveying	30.00		
Miscellaneous	22.91		
	——	$87,618.39	
DEDUCT—			
Received for paving	602.55		
Sand and gravel	143.40		
Labor	113.00		
	858.95		
ADD—			
Gravel from Cemetery	6.25		
	852.70		$86,765.69
WEST DIVISION.			
Labor	$ 60,255.98		
Lumber	19,497.74		
Stone	2,835.95		
Nails and Spikes	2,282.10		
Cleaning streets by contract	1,653.65		
Cinders	373.25		
Painting lamp posts	364.50		
Tug and pile driver	180.00		
Lamp posts, lamps and setting	124.56		
Tools	201.49		
Repairing tools	152.40		
Engineer	103.25		
Interest on temporary loans	762.85		
Amounts carried forward,	$88,787.72	$87,618.39	$86,765.69

		Cash Payment.	*True Cos*
Amounts brought forward,.....	$88,787.72	$87,618.39	$86,765.
Street signs	31.50		
Sawing lumber	33.20		
Roller.....	30.00		
Miscellaneous	30.27	88,912.69	
DEDUCT—			
Received for labor.....$	424.70		
Received for lamp posts.....	94.00		
Lumber.....	202.67		
	$721.37		$88,191.
NORTH DIVISION.			
Labor.....$	26,665.49		
Lumber.....	6,409.22		
Stone.....	1,175.26		
Nails and spikes.....	675.75		
Cleaning streets by contract.....	1,033.64		
Tools	78.53		
Repairing tools.....	47.24		
Sand and gravel.....	168.00		
Interest on temporary loans.....	317.14		
Broken Brick	150.50		
Roller	30.00		
		36,750.77	
DEDUCT—			
Labor	29.00		36,721.
CHICAGO CEMETERY.			
Lumber.....	326.42		
Constructing fence.....	135.40		
Nails	41.00		
Labor.....	1,245.73		
Gate Keeper	600.00		
Sand tickets.....	14.00		
Tools	7.25		
Receipts for sand refunded..	4.25		
Coal.....	12.50		
		2,386.55	
DEDUCT—			
Received for sand and gravel sold.....	2,892.20		
Removing bodies	149.00		
Labor on Milliman tract in 1866.....	971.00		
Rent of lot opposite Cemetery.....	30.00		
	4.042.20		
Amounts carried forward,.....		$215,668.40	$211,678.

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$215,668.40	$211,678.78
HOUSE MOVING AND STREET PERMITS.			
Special constables	1,249.95		
Permit clerk	312.50		
Permits returned	10.00		
Printing blanks.....	41.00		
Constable's badge.....	2.00	1,615.45	
Received for permits$4,894.95			
LUMBER ACCOUNT.			
Lumber purchased and not used.....		630.00	630.00
STREET LAMPS.			
Six posts	$86.70		
Setting Posts.....	105.25		
		191,95	191,95
DREDGING MAIN RIVER AND SOUTH BRANCH.			
Dredging 4,934 cubic yards.....$	2,072.28		
Inspecting.....	37.50		
		2,109.78	2,109.78
DREDGING NORTH BRANCH.			
Fox & Howard, dredging.....$	6,995.82		
Inspecting	96.00		
Advertising	15.50		
		7,107.32	7,107.32
NORTH DIVISION SIDEWALKS.			
Salary of superintendent.....$	393.90		
Salary of inspectors.....	1,800.00		
Constructing walks	153.90		
Record Book.....	3.00		
		2,350.80	
DEDUCT—			
Received for constructing walks in 1866 and 1867$	494.17		1,856.63
SOUTH DIVISION SIDEWALKS.			
Salary of superintendent..... ...$	393.90		
Salary of inspectors.....	2,700.00		
Constructing walks.....	398,73		
Record book	3.00		
		3,495.63	
DEDUCT—			
Received for constructing walks in 1866 and 1867.....	$632.04		2,863.59
WEST DIVISION SIDEWALKS.			
Salary of superintendent.....$	393.90		
Salary of inspectors	2,850.00		
Amounts carried forward, ...	$3,243.90	$233,169.33	$226,438.05

		Cash Payment.	True Cost.
Amounts brought forward,.....$	3,243.90	$233,169.33	$236,433.05
Constructing walks.....	593.87		
Record book.....	3.00		
		3,840.77	
DEDUCT—			
Reeeived for constructing walks in 1866 and 1867.....$	3.977,41		
HOUSE NUMBERS.			
Salary number clerk.....$	517.50		
Serving notices.....	150.00		
Map of Chicago.....	10.00		
Certificates and applications.....	18.00		
		695.50	
DEDUCT—			
Received for numbers.....$757.50			
DOCK LINE SURVEY.			
Engineers$	1,509.66		
Rodmen	1,939.87		
Draughtsman.....	839,00		
Car fares	91.70		
Use of tug.....	50.00		
Drawing paper and materials	34.55		
Nails and hatchets.....	11.20		
Miscellaneous	4.35		
		4,480.33	4,480.33
LAKE SHORE ROADWAY.			
Engineer.....$	157.00		
Rodmen	632.50		
Drawing paper.....	8.62		
Car fares.....	10.72		
		808.84	808.84
PUBLIC BUILDINGS.			
LAKE HOSPITAL.			
Labor on fence.....		12.50	12.50
COURT HOUSE AND SQUARE.			
Repairing cupola and roof.....$	294.67		
Repairing fence	677.50		
Glazing.....	19.62		
Plumbing and gas fitting city clerk's office.	38.25		
Gas fitting at gateway.....	20.50		
Stone for walk	7·00		
		1,057.54	1,057.54
NORTH MARKET.			
Repairing$	1,112.06		
Plastering	43.00		
Nails	21.00		
		1,176.06	1,176.06
Amounts carried forward, ...		$245,240.87	$238,973.32

		Cash Payment.	*True Cost.*
Amounts brought forward		$245,240.87	$238,973.32
BRIDEWELL.			
Lumber	$ 453.31		
Nails	54.50		
Plumbing	93.30		
Gas fitting	333.90		
Repairs	32.29		
Wheelbarrows	15.00		
Walks	13.50		
Glazing	17.22		
Miscellaneous	9.55		
		1,022.57	1,022.57
ARMORY.			
Repairing cells	$ 1,098.11		
Constructing drains	401.00		
Plumbing	152.95		
Walk and fence	135.00		
Caulking floors	90.00		
Plastering	57.50		
Ashes	36.00		
Ventilator	19.80		
Tin Work	8.70		
Glazing	12.28		
Hardware	.40		
Fire Department	18.67		
		2,030.41	2,030.41

PUBLIC PARKS.

LINCOLN PARK.			
Nelson & Benson, on contract for improving park	$ 10,562.69		
Swain Nelson, balance of contract	5,864.19		
S. Nelson & Co., account transplanting trees, cutting grass, &c	1,000.00		
Trees	790.50		
Constructing fence	725.41		
Lumber	498.32		
Nails	51.25		
Superintendent	242.50		
Hinges, screws and staples	6.37		
Advertising	15.50		
Labor	2.50		
		19,759.23	19,759.23
Amounts carried forward		$268,058.08	$256,785.53

		Cash Payment.	True Cha
Amounts brought forward,.....		$268,053.06	$256,785.
DEARBORN PARK.			
Labor.....	$470.25		
Painting fence	275.00		
Grass seed	5.63		
		750.88	750.
WASHINGTON PARK.			
Labor	$70.99		
Constructing walk.....	223.88		
Plans and specifications.....	50.00		
		344.87	344.
UNION PARK.			
Nelson & Benson, on account excavating lakes.....	$765.00		
Constructing drains	1,940.21		
Pipe for drains.....	1,612.10		
Brick for catch basins.....	163.80		
Covers for man holes....	152.50		
Labor	4,746.45		
Trees.....	3,204.00		
Superintendent.....	537.50		
Inspector	112.00		
Constructing walk and fence.....	948.26		
Macadam and stone screenings	2,880.29		
Tools.....	72.98		
Ashes	17.50		
Advertising for proposals.....	51.50		
Watering trees	56.00		
Lumber	95.16		
Miscellaneous	7.16		
		17,362.41	17,362.
LAKE PARK.			
Engineer.....	$52.55		
Rodmen	255.13		
Labor constructing fence and walk..	968.07		
Lumber and posts	767.90		
Spikes	37.50		
Filling.....	2,927.31		
Inspecting	316.67		
Labor	14.25		
Chain and oar	3.50		
		5,342.88	5,342.
JEFFERSON PARK.			
Labor.....	$529.57		
Lumber and Posts.....	29.08		
Constructing fence..	42.22		
Amounts carried forward.....	$600.87	$291,854.12	$280,586.

		Cash Payment.	True Cost
Amounts brought forward,.....	$600.87	$291,854.12	$280,586.57
Trees	246.00		
Tools	7.80		
Grass seed.....	5.75		
		860.42	860.42
CHICAGO HARBOR.			
Dredging$	6,606.60		
Harbor Master, including horse keeping and sundries	1,599.96		
Inspecting dredging	226.96		
Labor at Ogden Slip.....	165.00		
Removing obstructions.....	375.00		
Setting buoy	98.00		
Light house keeper at pier.....	87.87		
Oil, chimnies and glass for pier light	43.25		
Sounding harbor.....	524.75		
Roofing at Rush street	57.80		
Repairing dock at Adams street	135.00		
Advertising	84.69		
Express on life boat.....	12.80		
Repairing life boat.....	12.75		
Draughtsman	40.00		
Carpenter work.....	13.88		
Police badges	12.00		
Rope	18.37		
Lumber	10.22		
Signs	8.25		
		10,183.15	10,183.15
BRIDGE DEPARTMENT.			
Carpenter work.....$	12,346.64		
Lumber.....	6,587.05		
Nails and spikes.....	1,256.11		
Blacksmith work	613.47		
Assistant superintendent....	1,650.00		
Driving piles.....	870.20		
Chimnies, lanterns, lamps and repairs on same	591.75		
Oakum, rope, cordage and oars....	126.01		
Coal	371.75		
Advertising for proposals.....	161.63		
Iron	125.21		
Chain.....	260.91		
Tools	97.88		
Painting	242.53		
Amounts carried forward,.....	$25,301.14	$302,847.09	$291,580.14

		Cash Payment.	True Cost.
Amounts brought forward,	$25,301.14	$302,847.69	$291,580.1
Oil	330.19		
Gas pipe at Madison street	102.00		
Stove and pipe	148 08		
Damage to vessel	87.03		
Jack screws	68.00		
Signal balls	342.00		
Clock cases	63.00		
Use of tugs	103.00		
Cleaning reflectors	80.00		
Pipe, plunges, pumps and cans	45.95		
Pails and brooms	27.00		
Hardware	85.80		
Lignumvitæ sheaves	19.80		
Express	22.00		
Bell	10.00		
Windows	18.50		
Car fares and miscellaneous expenses	45.95		
		27,399.44	
DEDUCT—			
Received for labor and materials for Lake street bridge	$ 6,550.00		
Received for damages to bridges	209.87		
Old iron sold	70.73		
Labor	39.56		
	$6,870.16		20,529.3
RUSH STREET BRIDGE.			
Tending bridge	$ 2,180,00		
Cut stone and labor	394.08		
Repairing pier protection	25.00		
Blacksmith work	28.90		
		2,627.98	2,627.9
STATE STREET BRIDGE.			
Tending bridge	$ 1,960.00		
Lumber	704.76		
Painting	321.45		
Gas fitting	170.45		
		3,156.66	
DEDUCT—			
Amount received from Chicago & North-Western Railway Co. $766.67			2,389.9
CLARK STREET BRIDGE.			
Tending bridge	$ 1,040.00		
Lumber	227.50		
Painting	375.00		
Two lamp posts	68.00		
		2,610.55	2,610.5
Amounts carried forward,		$338,642.82	$319,757.9

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$388,642.32	$319,737.94
WELLS STREET BRIDGE.			
ng bridge$	1,940.00		
er	297.30		
ıg.....	68.22		
nd composition	74.20		
		2,379.72	2,379.72
LAKE STREET BRIDGE.			
; Howard, constructing new bridge.$	11,450.00		
ng bridge	1,780.00		
er.....	934.76		
ges to schooner Muskingum.....	80.00		
		14,244.76	14,244.76
RANDOLPH STREET BRIDGE.			
ng bridge$	1,780.00		
er	231.00		
ges to schooner Hirondelle.....	117.78		
		2,128.78	2,128.78
MADISON STREET BRIDGE.			
ıg bridge $	1,700.00		
ıg stone	37.00		
ring bridge house.....	62.47		
		1,799.47	1,799.47
VAN BUREN STREET BRIDGE.			
Howard, constructing new bridge.$	18,270.00		
extra on west approach..	283.60		
ɔrary loan.....	3,500.00		
ry on center pier.....	126.00		
for approach.....	195.00		
on approach by city laborers.....	115.35		
ıt on temporary loan.....	175.00		
ter	159.70		
ıg	401.80		
:r.....	112.45		
ıg bridge.....	1,660.00		
		24,998.90	
T—			
ived from temporary loans.$3,500.00			
ived for damage by vessel. 100.50			
	3,600.50		21,398.40
POLK STREET BRIDGE.			
g bridge$	1,600.00		
ng bridge	444.08		
Amounts carried forward,.....	$2,044.08	$384,193.95	$361,689.07

		Cash Payment.	True Cost.
Amounts brought forward,.....	$2,044.08	384,198.95	$361,689.07
Lumber.....	27.53		
Bell	10.00		
Sash	2.25		
		2,083.86	2,083.86
TWELFTH STREET BRIDGE.			
Tending bridge$	1,600.00		
Blacksmith work	72.41		
Lumber.....	10.50		
		1,682.91	1,682.91
EIGHTEENTH STREET BRIDGE.			
Fox & Howard, on account of new bridge .$	27,500.00		
Repairing old bridge.....	271.10		
Towing bridge	65.00		
Advertising for proposals	39.88		
Lumber.....	32.50		
Machine work.....	14.17		
Bell stand.....	6.04		
Tending bridge.....	1,600.00		
		29,528.69	29,528.69
HALSTED STREET BRIDGE.			
Tending bridge.....		1,460.00	1,460.00
ARCHER ROAD BRIDGE.			
Tending bridge.....		520.00	520.00
FULLER STREET BRIDGE.			
Tending bridge.....		520.00	520.00
REUBEN STREET BRIDGE.			
Tending bridge.....$	200.00		
Lumber.....	199.07		
		399.07	399.07
KINZIE STREET BRIDGE.			
Tending bridge.....$	1,580.00		
Lamp post.....	68.00		
		1,648.00	1,648.00
INDIANA STREET BRIDGE.			
Tending bridge.....$	1,460.00		
Lumber.....	122.68		
		1,582.68	1,582.68
ERIE STREET BRIDGE.			
Tending bridge$	1,380.00		
Iron drum.....	77.12		
Lumber.....	17.40		
		1,474.52	1,474.52
Amounts carried forward,.....		$425,093.68	$402,588.80

		Cash Payment.	*True Cost.*
Amounts brought forward		$425,093.68	$402,588.80
CHICAGO AVENUE BRIDGE.			
Fox & Howard, constructing new bridge	$ 26,400.00		
" extra labor and materials	759.74		
Lumber	32.33		
Copper wire	2.80		
Tending bridge	1,380.00		
		28,574.87	28,574.87
NORTH AVENUE BRIDGE.			
Tending bridge	$ 780.00		
Lumber	6.93		
		786.93	786.93
CLYBOURN AVENUE BRIDGE.			
Tending bridge		$520.00	520.00
NORTH HALSTED STREET BRIDGE.			
Tending bridge	$940.00		
Painting bridge	250.00		
Building bridge house	165.67		
Stove and pipe	20.53		
		1,376.20	1,376.20
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners	$3,000.00		
Salary of Secretary	933.32		
Salary of City Engineer	1,500.00		
Salaries of Book-keeper and Assistant	1,073.30		
Salary of Superintendent	899.99		
Salaries of Assistant Engineers	5,827.33		
Salaries of Clerks	2,412.60		
Salaries of Special Assessment Clerks	7,967.32		
Salaries of Draughtsmen	3,140.10		
Messenger, Janitor and Watchman	458.00		
Office rent	2,124.51		
Temporary loans	116,520.47		
Advertising	8,090.42		
Blank books and stationery	609.53		
Printing blanks, assessments and notices	731.61		
Furniture	475.04		
Coal and kindling wood	250.16		
Repairs	126.48		
Commissioners' oaths	109.50		
Postage and revenue stamps	80.33		
Copy of objections to assessments by Superior Court	50.00		
Safe	70.00		
Map books	90.00		
Amounts carried forward,	$156,540.01	$456,351.68	$433,846.80

		Cash Payment.	True Cost.
Amounts brought forward.....	$156,540.01	$456,351.68	$483,846.8
Painting, graining, varnishing and signs..	75.59		
Plumbing and gas fitting.....	88.77		
Awnings.....	71.68		
Hardware, locks, keys and tape measure..	77.95		
Books and paper.....	41.37		
Pigeon holes and boxes.....	30.19		
Gas.....	53.05		
Repairing surveying instruments.....	49.25		
Storing and repairing stoves.....	29.85		
Ice.....	22.31		
Map of Chicago.....	10.00		
Sprinkling front of office.....	15.00		
Draughtsman's tools.....	7.70		
Cleaning office and washing towels.....	61.81		
Miscellaneous.....	173.93		
		157,343.46	
DEDUCT—			
Received from temporary loans.....	$116,520.47		
Labor and costs on special assessments.	13,375.03		
Licenses and bonds.....	160.05		
Damages to lamp post.....	15.00		
	$130.070.55		27.272.91
INTERSECTION OF STREETS.			
Paving Wabash av., Randolph to 22d st..	$2,225.33		
Paving Milwaukee avenue.....	23,450.78		
Paving North Clark street.....	16,948.98		
Paving South Clark street.....	2,264.53		
Paving La Salle street, Madison to Van Buren street.....	6,405.50		
Paving Wabash avenue, South Water to Randolph street.....	2,823.71		
Paving Monroe street.....	636.85		
Paving Clinton street.....	3,233.77		
Paving Kinzie street.....	6,241.38		
Paving Indiana avenue.....	2,070 01		
Paving Halsted street.....	7,000.00		
Paving Wells street, Lake to Randolph ..	683.75		
Paving Wells st., Van Buren to Taylor...	1,691.93		
Paving Canal street.....	2,313.17		
Paving La Salle street, Washington to Madison.....	263.68		
Paving Griswold street.....	740.00		
Paving Sherman street.....	162.86		
Amounts carried forward.....	$ 79,156.23	$613,695.14	$461,119.71

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$79,156.23	$613,695.14	$461,119.71
Paving intersection Lake st. and Wabash avenue	824.75		
Paving intersection River street and Michigan avenue.....	241.00		
Paving intersection West Madison and Halsted streets	1,814.00		
Paving South Water st., Clark to Franklin street.....	112.91		
Paving South Water st., Wabash avenue to Michigan av	28.69		
Macadamizing Halsted street, Archer av. to 31st street.....	508.16		
Macadamizing Halsted street, 31st street to Egan avenue.....	1,508.60		
Macadamizing Canal street.....	982.99		
Macadamizing Division and Wolcott streets	1,088.91		
Macadamizing Chicago avenue	5,100.00		
Macadamizing Market street.....	5,363.65		
Graveling Rush street.....	1.624.42		
Graveling Michigan avenue, Park place to 12th street	193.86		
Graveling Michigan avenue, 12th street to 22d street	4,589.53		
Planking West Twelfth street.....	184.10		
Planking Haddock Place.....	24.21		
Planking Alley, Block 7, Fort Dearborn Addition.....	43.41		
Planking West 22d street, Center avenue to Reuben street.....	904.50		
Planking West 22d street, Center avenue to Morgan street.....	707.95		
Planking alleys from 14th st. to 16th st., between State st. and Wabash av.....	153.23		
Cindering Archer road.....	695.98		
Cindering Noble street and Elston road...	860.02		
Filling Alley, Block 33, O. T.....	18.00		
On account of Wells street viaduct	6,000.00		
Labor raising catch basins	5,394.38		
Cement for catch basins	1,224.90		
Lumber for catch basins	323.26		
Interest on loans	1,028.56		
		120,700.20	
Amounts carried forward,.....		$734,395.34	$461,119.71

		Cash Payment.	True Cost.
Amounts brought forward		$784,895.84	$461,119.71
DEDUCT—			
Over charge for labor refunded.....	$160.88		
			120,539.82
Total cash expenditures		$784,895.84	$581,659.53
Balance in hand of City Treasurer April 1, 1868		178,534.69	
		$912,930.03	

WASHINGTON STREET TUNNEL DEPARTMENT.

Trial Balance, Ledger, Board of Public Works.

	DR.	CR.
Washington Street Tunnel Bonds		$155,000.00
Discount on bonds	$8,895.18	
Washington St. Tunnel Funds in hands of Treasurer	20,799.68	
Tunnel miscellaneous expenses	28,105.19	
James K. Lake & Co	76,615.88	
Stewart, Ludlam & Co	20,584.57	
	$155,000.00	$155,000.00

WASHINGTON STREET TUNNEL FUND.

STATEMENT of the Cash Receipts of the Board of Public Works from April 1, 1867, to March 31, 1868, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds of 130 Municipal Bonds sold....	$121,385.96		
Voucher canceled	500.00		
		121,885.96	
Balance on hand April 1, 1867		5,460.51	$127,346.47

EXPENDITURES.

CONTRACTORS.		*Cash Payment.*	*True Cost.*
Stewart, Ludlam & Co.....	$4,948.87		
James K. Lake & Co	76,615.38		
		81,564.25	81,564.25
MISCELLANEOUS EXPENSES.			
Damages to lots on account of tunnel....	$8,294.50		
Constructing curb wall	3,815.70		
Salary Assistant Engineer.....	2,199.96		
Assistant Harbor Master	1,461.20		
Draughtsman	890.07		
Labor.	1,252.42		
Inspectors and rodmen.....	2,832.25		
Rent of dock.....	2,000.00		
Lumber	1,023.16		
Advertising for proposals	174.02		
Pipe and fittings	288.23		
Engraving bonds.....	139.30		
Repairing gas pipe	123.11		
Nails and hardware.....	76.93		
Drawing materials	60.13		
Disinfectants.....	59.00		
Amounts carried forward, ...	$24,689.98	$81,564.25	$81,564.25

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$24,689.98	$81,564.25	$81,564.25
Specifications	48.50		
Iron work....	15.55		
Cement.....	15.75		
Repairing warehouse.....	15.00		
Use of tug.....	10.00		
Express, telegram and expense of sale of bonds.....	62.01		
Miscellaneous	125.75		
		24,982.54	
DEDUCT—			
Amount of voucher issued, canceled...	$500.00		
			24,482.54
Total expenditures		$106,546.79	$106,046.79
Balance on hand April 1, 1868.....		20,799.68	
		$127,346.47	

EIGHTH ANNUAL REPORT

OF THE

Board of Public Works

TO THE

COMMON COUNCIL

OF THE

CITY OF CHICAGO.

FOR THE

MUNICIPAL FISCAL YEAR ENDING MARCH 31st, 1869.

CHICAGO:
PRESS OF JAMESON & MORSE, 12 & 14 LA SALLE STREET.
1869.

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1869.

BOARD OF PUBLIC WORKS.

MEMBERS OF THE BOARD.

A. H. BURLEY, COMMISSIONER AND PRESIDENT.

JOHN McARTHUR, COMMISSIONER AND TREASURER.

W. H. CARTER, COMMISSIONER.

WILLIAM GOODING, } MEMBERS ACTING ONLY IN MATTERS PERTAINING TO CLEANSING CHICAGO RIVER.
ROSWELL B. MASON, }

OFFICERS.

A. W. TINKHAM, SECRETARY.

E. S. CHESBROUGH, CITY ENGINEER.

COMMISSIONERS' REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS,
CHICAGO, October 1st, 1869.

To the Mayor and Aldermen of the City of Chicago, in Common Council assembled:

The Board of Public Works submit herewith the report of their doings in the several departments of public work entrusted to their supervision, for the fiscal year ending March 31st, 1869.

The year has been one of great activity in all these various departments, and of marked advance in all public improvements. It is particularly memorable as the year when was completed and brought into use the first tunnel under the river—Washington Street Tunnel. The river with its branches divides the city into three distinct parts. All interruption of communication between these natural divisions tends to isolation. Nothing will so much contribute to secure that unity of feeling and interest which is essential to the prosperity of the city as reliable and convenient means for intercourse between them. It is hoped that this experimental tunnel will be found a sure and convenient method for travel to pass the river, and that it will afford an adequate relief from the interruptions and annoyances—ever growing with the commerce of the city—caused by the turning of the bridges for the passage of vessels.

The Board report on the various departments of work in the same order as in previous reports.

WATER WORKS.

CONDITION OF WORKS GENERALLY.

With a trifling exception, alluded to in the report of the City Engineer, the supply of water to the city has been uninterrupted during the year. The Lake Tunnel has supplied all the water used, and has remained apparently undisturbed and uninjured. The quality of the water has been always good. With the extreme heat of summer, the use and waste of water became so excessive that it was impossible to furnish an adequate supply to the parts of the city more distant from the works. The Board were then obliged to give public notice that their rules forbidding such waste would be strictly enforced. With this exception, the supply has been so maintained that there has been no general complaint. As is remarked more fully hereafter, the necessary supply for the city has become so large that it fully equals what may be considered as a safe measure of the pumping capacity of the works, making proper allowance for their liability to accident.

NEED OF NEW ENGINES.

In the last annual report, as in several special reports, the Board have urged upon the attention of your honorable body the necessity of erecting at once additional engines. The experience of the past year shows that their construction cannot be entered upon too soon. The rapid growth of the city for years, and the consequent extensive additions to the water mains, with other causes, have caused a large increase, year by year, of the amount

of water consumed, until now the maximum amount pumped on some days fully equals if it does not exceed what the works can be safely relied upon to supply.

The average daily amount pumped for the year was 14,725,000 gallons—an increase of about 27 per cent. over the daily average for the year preceding. The greatest amount pumped in one day was 19,623,037 gallons.

As remarked in the report of the Engineer, the rate of gain in the amount of water required for the supply of the city has been such for several years that the daily supply for the year ending March 31st, 1870, will not be likely to be less than 20,000,000 gallons, reaching, with the extreme days of winter and summer, a much greater amount.

The daily average supply of Boston for the year 1868 was 14,769,167 gallons, corresponding almost exactly with Chicago.

NEW ENGINE HOUSE.

During the year, the well curb for the pumping well for the south wing of the Engine House was sunk into its place, and the south wing with the south boiler room completed. This additional pumping well is circular, was constructed above ground, and subsequently sunk to its place in like manner with the north well, and in general corresponds with it in its manner and plan of construction, except that it is somewhat larger. It is all ready for receiving the foundation of a new engine.

The grounds surrounding the pumping works are yet to be properly fenced and ornamented. It is in contemplation to somewhat extend them by filling up a portion of the basin, enclosed by the old and decayed crib work.

The new works, it is believed, are hardly equalled anywhere for commodiousness and beauty.

WATER PIPES.

The amount of water pipes laid last year was very great—more than in any previous year. The new districts supplied would of themselves constitute a respectably sized city. As laid in the three divisions, the amounts are as follows:

In the South Division	55,850	feet.
" " West "	81,675	"
" " North "	23,558	"
Total	161,083	feet,

or 30 miles and 2,683 feet.

There are now laid in the city, of mains of all sizes, 208 miles and 3,117 feet. This extent of pipes laid exceeds that of any other city in our country, excepting New York, Brooklyn and Philadelphia.

One principal cause of the lack of supply to certain portions of the city is, that the supply mains are not large enough, and not enough extended. This defect the Board have planned to remedy by a system of mains, making circuit of the three divisions of the city.

Commencing at the pumping works, it is proposed to have a continuous circuit of two feet mains by the following route:

On Pine street to Chicago river.

On River street and Wabash avenue, from Chicago river to Twenty-second street. } Already laid.

On Wabash avenue, from Twenty-second street to Thirty-first street.

On Thirty-first street, from Wabash avenue to Main street.

On Main street to South branch Chicago river.

On Throop street, from river to Twenty-second street.

On Twenty-second street, from Throop street to Reuben street.

On Reuben street, from Twenty-second street to Division street.

On Division street, from Reuben street to Crosby street.

On Crosby street, from Division street to opposite Oak street.

On Oak street (and alley) from Crosby street to Rush street.

On Rush street, from Oak street to Pearson street.

On Pearson street, from Rush street to the pumping works; making a continuous main of two feet diameter, of about thirteen miles in length. A considerable portion of this will be laid during the present calendar year.

Across the nearly rectangular space enclosed by this circuit of mains, will be laid other and smaller mains, connecting with the system of main and distribution pipes as already laid.

On West Chicago avenue, the sixteen inch main will be extended west to Reuben street.

On Harrison street, it is proposed to lay a twelve inch main, from Desplaines street to Reuben street.

On Twelfth street, the sixteen inch mains will be extended west to Reuben street.

On Green street, between Harrison and Monroe streets, and on Lytle street, between Harrison and Twelfth streets, twelve inch mains are proposed.

The particular route of the circuit and connecting mains may be somewhat modified in carrying the plan into execution.

Notwithstanding the very large amount of pipes laid during the year now reported on, the demand for the laying of more pipes continues unabated. Apparently as much will be required during the present year as in the last.

FIRE HYDRANTS.

One hundred and fifty-one new hydrants were erected during the year, making the total number now connected with the works 1,070.

TAPPING OF THE WATER PIPES.

The water pipes are drilled (or tapped) by employes of the Board. The city also furnishes the cast-iron boxes used for protecting the taps at the pipes, and at the sidewalk, to indicate the

location of the stop-cock. For this service, a charge is made to cover the cost to the city. The plumbing is all done by licensed plumbers, at the expense of parties introducing the water. A very large number of taps was inserted during the year, consisting of the following sizes, viz:

1 inch	110
¾ "	138
⅝ "	1,582
½ "	2,838
Total number	4,668

WATER RATES COLLECTED.

The total income received from water rents and taxes during the year ending March 31st, 1869, amounted to $420,686.94.

WATER METERS.

The Board have found the use of meters in establishments using large quantities of water, both satisfactory to consumers and profitable to the city. The only ones in use are the Worthington meters. One hundred and fifty-four new meters were added during the year, making the whole number belonging to the water works four hundred and twenty-nine, of which number four hundred are in use.

The numbers on hand, of each size, are given below:

⅝ inch Meters	78
1 " "	154
1½ " "	65
2 " "	79
3 " "	49
4 " "	4
Total number of meters	429

The whole amount of water pumped during the year was ,374,624,576 gallons, for all purposes. The amount measured nd paid for by meters, was 507,615,500 gallons. The revenue rom the use of water passing through the meters, amounted to 376,525.26. The average tax received for a thousand gallons, was $15\frac{1}{18}$ cents.

It is not the practice of the Board to attach meters to dwelling houses.

An experiment of some interest was, however, made by connecting meters, in several instances, to blocks of dwelling houses, generally without baths or water closets, or other extra attachments. The object was to ascertain how far the amount of water actually used agreed with the assessment levied for the same. The results are given below:

Block of 8 dwellings, without extras, one year's assessment	$ 80.00
Charge for same if rated by meter, at two cents ₱ 100 gals.	186.00
Block of 12 houses, without extras, eight months' assessment	121.00
Charge by meter for same, for eight months	168.00
Block of 9 houses, 3 of which had each one bath and one water closet, ten months' assessment	102.00
Meter charge for ten months	156.48

It has been remarked that the daily average consumption of water last year agreed very nearly with that of Boston. A comparison of the water rates received in the two cities will not be without interest. Below we give such a statement:

Total income from water rates in 1868, Boston	$553,744.88
Same for year ending March 31st, 1869, Chicago	420,686.94

INTEREST, EXPENSES AND SURPLUS REVENUE.

Expenses at Pumping Works	$64,727.37
Lake Tunnel—Salary of Keeper at Crib, Repairs of Crib, use of Tugs, &c	5,212.29

Repairs of Pipes, Hydrants, &c., and miscellaneous operating expenses	34,413.60
Water Meters, repairs, depreciation and operating expenses	3,051.89
Salaries of Board and Officers, office rent and expenses, and all salaries and expenses pertaining to the Water Office, and the assessment and collection of water rents	30,527.73
Interest on Water Loan Bonds, including $3,999.36 transferred from discount account	171,761.62
Total interest and operating expenses	$309,694.50
Income from Water Rates, as stated above	$420,686.94
Deduct interest and expenses	309,694.50
Surplus Revenue	$110,992.44

COST OF ADDITIONS TO THE WORKS DURING THE YEAR.

$30\frac{4}{5}\frac{6}{2}\frac{8}{8}\frac{3}{0}$ miles of Water Pipes laid, including expenditure on Tunnel, for water main at Twelfth Street	$266,961.35
New Engines, balance in full to contractors	1,212.16
New Pumping Well, South wing of Engine House	16,749.42
New Engine House	35,279.27
Water Works Tower	929.62
Temporary connection with Lake Tunnel	1,421.40
New Inlet, connecting shaft of Lake Tunnel and Engine House	6,113.22
New Machine Shops and fixtures for same	5,617.41
Surveys, &c., for Extension of Lake Tunnel to West Division	1,187.80
	$335,471.65

COST OF THE WORKS, APRIL 1st, 1869.

of the Water Works, including all expendi-
res on works in progress, March 31st, 1869 . . . $3,146,383.14

MEANS BY WHICH WORKS WERE PAID FOR.

er Loan Bonds, six per cent., $1,030,000.00,	
ducting for discount, $42,638.10	$ 987,361.90
er Loan Bonds, seven per cent	1,690,000.00
nce from Water Rents	469,021.24
	$3,146,383.14

SEWERAGE WORKS.

Chicago is peculiarly fortunate in having a *system* of sewers. In most cities it has been the practice to construct individual sewers from time to time, according to the want of the particular street or district to be drained, and without any general plan for the drainage of the entire city. In after years, as it became necessary to use them as general sewers, they have often been found inadequate as to capacity, or useless from being at unsuitable grades and elevation. In Chicago, each sewer is a link in the system, and designed to fulfill its work as a part of the whole. The change or re-laying of a permanent sewer has never yet been necessary.

The sewerage system has continued to work efficiently, as has been heretofore reported.

The demand for the laying of new sewers was, as usual, very great. The want of means, however, necessarily limited very much the length laid during the year. For about one-tenth of that put down, the money was advanced by private parties, to be refunded subsequently. The total amounts laid in the three divisions, and the cost for each division, are as stated below:

LENGTH AND COST OF SEWERS LAID DURING THE YEAR.

South Division,	8,597 feet		$ 42,396.01
West "	27,736 "		105,009.20
North "	11,508 "		49,747.71
Total	47,841 feet, or $9\frac{821}{5280}$ miles, costing		$197,152.92

Of the above amount, some two miles were made necessary by the laying down of new pavements. The total length of sewers laid in the city, March 31st, 1869, was $110\frac{1491}{5280}$ miles.

SEWER CLEANING.

Notwithstanding the increased length of sewers, as compared with the previous year, the cost of the cleaning of the sewers for the two years corresponded almost exactly.

Cost of cleaning Sewers and Catch Basins during the year $26,954.06

SEWER REPAIRS.

Cost of the repairs of Sewers and Catch Basins, and of the renewal and repairs of manhole covers during the year $11,287.08

PRIVATE DRAINS CONNECTING WITH PUBLIC SEWERS.

It is the aim of the Board to require that all lots on the line of a proposed pavement shall be supplied with drains, as also with water and gas service pipes, in advance of the laying of the pavement. Most of these drains and water pipes are laid by the city, and an assessment levied for their cost. The statement below accordingly includes many permits for drains, the charge for which will be collected by the city when the assessments are paid.

PERMITS ISSUED.

South Division	776	
West "	1,419	
North "	1,066	
Total	3,261	
Total receipts from permits		$11,208.10

SEWERAGE EXPENSES, REPAIRS AND INTEREST.

Interest on sewerage loan bonds and temporary loans	$126,349.51
Sewerage sinking fund, amount set aside, tax of 1868.	28,878.82
Salaries, office rent, and office and miscellaneous expenses	18,273.55
Repairs and cleaning of sewers as above	38,241.14
Total cost for the year	$211,743.02

SEWERAGE LOAN BONDS.

Six per cent. bonds outstanding March 31st, 1869.	$ 87.000.00
Seven " " " " " "	1,753,000.00
Total of sewerage bonds March 31st, 1869	$1,840,000.00

SEWERAGE SINKING FUND.

The condition of the fund April 1st, 1869, was as follows:

Balance in hands of City Treasurer	$32,938.47
Due from the sewerage tax of 1868	31,069.20
Mortgage due and unpaid	5,922.10
Total not yet applied to canceling of sewerage bonds	$69,929.77

No bonds were canceled during last year. The total amount purchased and canceled remains as then reported, $160,000.00.

The mortgage referred to is in process of foreclosure.

DEEPENING OF THE ILLINOIS AND MICHIGAN CANAL.

The report for the previous year spoke of the work on the Canal as being all under contract, excepting on secs. 17–44, inclusive. These sections were advertised to be let early in the season, but, from various causes, it was not till the close of the summer that they were all under contract. The contractors for these specified sections are as follows, viz:

Secs. 17–19, Hugh Maher.
" 20–26, Fox, Howard & Walker.
" 27–32, Jno. J. Parry.
" 33–37, Carkin & Kimball.
" 38–39, Barnard & Gowen.
" 40–44, Fox, Howard & Walker

The contracts for this new letting require that the work shall be wholly completed March 31st, 1871, and stipulate that if the progress made is such as to require it, such a force of men, teams, &c., shall be put at work during the suspension of navigation as will ensure the completion at the stipulated time. The Board are using every exertion to bring this important work to a close, so that its sanitary and commercial benefits may be realized by the city as early as the time set in the contracts. One incidental benefit resulting from the deepening of the canal will be the largely increased value to lands bordering upon it and drained by its deepening.

By the terms of the original grant from the Canal Trustees, authorizing the city to enter upon the canal for its deepening, the time for the doing of the work was restricted to three years.

This time having elapsed, an extension, for an additional term of three years, was asked for by the Board, and was granted.

A larger amount of work was done during the year than in any previous year. At the request of the Board, navigation was suspended on the canal and the water drained off, November 1st, to permit the rock contractors to commence work. During the winter, the rock sections—sections 45–64—were nearly completed. A large amount of machinery is now in operation on the remaining sections, termed the earth sections.

Below we give an exhibit of the amount of material removed during the year:

Earth excavation	390,234	cubic	yards.
Rock "	138,601	"	"
Rip-rap wall,	3,294	"	"
Retaining wall,	314	"	"

During the summer, the Pumping Works at Bridgeport were employed as became necessary, and the main and South Branch river thus maintained without offensiveness through the season.

The Board having disagreed with the Canal Trustees, as to the proportionate part of the expense of pumping for the previous year properly chargeable to the city, the question was finally settled by arbitration, Hon. John M. Wilson being the arbitrator. The amounts paid for pumping that year and the last, are stated herewith:

COST OF PUMPING AT BRIDGEPORT FOR CLEANSING CHICAGO RIVER.

Summer of 1867	$17,875.21
" " 1868	11,178.88

CHICAGO HARBOR.

The frequent grounding of vessels in many parts of the river, made it apparent that there were many shallow spots requiring deepening. Accordingly, early in the season, proposals were invited for doing what dredging should be found necessary by the Board in the river, and a contract made with Messrs. Fox & Howard, at the rates of forty-two cents a cubic yard for dredging done between the mouth of the river and Twelfth street and Chicago avenue, and sixty-nine cents a yard for material removed above those two streets. A large amount of dredging was required under this contract, costing altogether, during the year, $63,559.07.

A channel was also opened in the South fork of the South Branch, from the canal locks to the grounds of the Rolling Mills, paid for in part by a special assessment levied several years before. This channel was nearly, but not quite, completed in the summer and fall of 1868. The expenditure to the close of the fiscal year was $13,338.33.

No work has been found necessary at the mouth of the harbor, the previous extension of the pier and dredging by the United States Government having been found adequate for the maintenance of the channel over the bar.

WASHINGTON STREET TUNNEL.

The work on the tunnel under the river at Washington Street was prosecuted vigorously throughout the year by the contractors, Messrs. J. K. Lake, Charles B. Farwell and A. A. McDonnell. The short time in which the west half of the river portion of the tunnel was completed, affords an instance of the energy with which the work was carried forward. Notice was given by the contractors, that on October 28th, 1868, they would commence the construction of the coffer-dam. On new years' day succeeding, a little more than two months after—the work was substantially completed, and the event was formally celebrated by the passage of a procession through the tunnel, of the city authorities with others, and subsequently of the citizens generally.

While the west half of that part of the tunnel beneath the river was in progress, a leak manifested itself in the masonry of the east half, which caused considerable anxiety for awhile. It was apparently caused by some slight movement in the masonry before the two parts were brought together. Measures have been taken to close it up, which it is believed will be successful, and in fact it has so much lessened as to be hardly noticeable on the walls and upper arch, unless, perhaps, in winter.

The steady throng of pedestrians and vehicles through the tunnel, gives the best possible testimony to its utility. In the ease with which the passage under the river is made by pedestrians, and by all except very heavily loaded teams, it more than answers all that was anticipated of it.

An interesting trial was made soon after the celebration spoken of above, the object being to ascertain what loads could be conveniently drawn up the grades of the tunnel—and to prescribe limits to such, if it was found necessary. The trial took place January 26th, 1869, and the results are given below.

The passage through was from West to East, the teams entering at Clinton Street in the West Division, and coming out at Franklin Street in the South Division. The teams were all two horse teams, and the vehicles four wheeled trucks.

The descent from Clinton Street to the bottom of the tunnel, is 43.75 feet, and the declivity 1 foot in 18.6265. The ascent from the bottom of the tunnel, to the eastern extremity of the approach at Franklin Street, is 41.77 feet, and the declivity 1 foot in 16.

This last grade, it should be remarked, is regarded by the Board as steeper than is desirable.

The distance through, from the top of the western approach to the top of the eastern, is 1608 feet.

First Truck—Weight of team, 2600 lbs., weight of truck,	2840 lbs.	
" " load,	3605 "	
		6445 lbs.
Second Truck—Weight of team, 2500 lbs., weight of truck,	2800 lbs.	
" " load,	3700 "	
		6500 lbs.
Third Truck—Weight of team, 2500 lbs., weight of truck,	3200 lbs.	
" " load,	4080 "	
		7280 lbs.
Fourth Truck—Weight of team, 3000 lbs., weight of truck,	3485 lbs.	
" " load,	5200 "	
		8685 lbs.
Fifth Truck—Weight of team, 2600 lbs., weight of truck,	2800 lbs.	
" " load,	6365 "	
		9165 lbs.

The trial, it will be observed, took place in winter, the roadway of the open approaches being somewhat snowy and slippery. All of the teams passed through without stopping. All but the last pulled up the ascent with ease; the last team with difficulty. Its gross load of over four and one-half tons, was apparently about the measure of its strength.

In the appended report of the City Engineer will be found a full description of this interesting work, with engravings illustrating its manner of construction.

Late in the year the City Engineer was instructed to visit New York and other places at the East, for the purpose of getting information for use in planning for a tunnel under the main river,

connecting the South and North Divisions. One object was to get any information to be had concerning iron tunnels. The conclusion arrived at was, that the experience of Chicago fully equals that of other cities as to the best manner of constructing tunnels.

STREET WORK.

The experience of the preceding year had demonstrated that the cleaning of the paved streets of the city could be done more cheaply and effectively by contract than by day labor. It was believed, also, that the work could be more advantageously let for a term of three years than for one year. Proposals for doing the work for one year, and also for three years, were therefore obtained, and a report of the same at the time made to your honorable body. It was not, however, until late in the season, that the Board received authority to let the work, after again advertising for bids. The contract is now in the hands of Mr. John T. Salter, (represented by Mr. Levi P. Wright,) for the term of three years, commencing November 20th, 1868, and ending November 19th, 1871, for streets now improved, and for such as shall be improved during the time of the contract. The price to be paid is $1,972.50 per mile for one year's cleaning. The contractor is doing his work energetically and satisfactorily.

The street pavements put down last year were all wooden block pavements, as has been the practice for several years. About six miles of streets were thus paved. The particular mode of laying the pavement corresponded generally with that described in the report of the year previous.

A new style of pavement was, however, introduced on several of the streets, termed the Boyington patent pavement. This pavement is the invention of Mr. W. W. Boyington, of this city, and its use on the streets for last year was granted by him without charge for the patent right.

STREETS PAVED WITH THE PATENT BOYINGTON PAVEMENT.

Franklin street, from South Water street to Madison street.
Twenty-second street, from State street to Kankakee avenue.
Michigan avenue, from South Water street to Lake street.

The peculiarities of this pavement are that one half of the rows of the three-inch blocks are *seven* inches deep, (instead of six, as usual,) resting on the ordinary flooring of inch boards, while the alternate rows of the usual depth of six inches rest on the center of strips of inch boards, five inches wide, placed crosswise of the flooring. These strips touch against the seven-inch rows, and are nailed to the flooring. There are thus formed between the six and seven-inch rows, cells six inches deep and one inch wide, extending across the street. As respects the gravel in the cells, and on the surface, and the use of tar, the pavement does not differ from the ordinary mode as described heretofore.

There are now in use in the city four different kinds of wooden block pavement, viz:

First. That termed the Nicolson, with which the earlier avements were laid. The cells or spaces in this pavement are lf-filled with a three-inch strip, or picket, and half with gravel id tar.

Second. The pavement now in general use. In this, the cells the whole depth of six inches are filled with a composition of avel and tar.

Third. The Boyington patent pavement, described above.

Fourth. The Converse wooden pavement. This differs from e others mainly in that the cells which, in the other modes, are cupied wholly or in part with gravel and tar, are here dispensed th, the space between the rows of blocks being occupied with ips of inch boards of the same height as the blocks, set up gewise.

As is generally known, the improvements of the streets and leys of the city are paid for by special assessments with such appropriation from the general fund of the city as shall seem accord with the benefits to result to private property and to

the city at large. The following tabular statement is an exhibit of the large amount of work done in the special assessment department of the Board, including not only the street but other improvements, the cost of which is apportioned as stated above. In the main, this is a work of preparation for what is to be done in the ensuing year.

SPECIAL ASSESSMENT DEPARTMENT REPORT.

CHICAGO, April 1st, 1869.

MR. A. W. TINKHAM,

Secretary Board of Public Works.

SIR:—I present herewith a tabular statement showing in detail the assessment work that has been done in this department from April 1st, 1868, to April 1st, 1869, together with a summary of the street improvements provided for by assessment during the past year, and a statement of the special assessment business of the Board since 1861.

STATEMENT OF ASSESSMENTS FOR STREET OPENINGS & WIDENINGS.

No. of Warr't	NAME OF STREET.	FROM	TO	Amount of Assessment.
231	W. Monroe st.....	Leavitt st.....	Western av.....	$2,042 72
234	Seeley st.....	W. Jackson st.....	W. VanBuren st...	891 95
313	Adams st.....	Its West'n terminus	Western av.....	11,506 96
320	North av.....	Milwaukee av	Western av.....	257 90
352	Michigan av.....	Douglas place.....	Egan av	16,468 36
380	Baldwin st.....	Present terminus..	Hubbard st.....	795 00
394	Reuben st.....	South Western av..	W. Madison st.....	6,350 00
397	Eugenie st.....	Easterly	N. Clark st.....	5,661 38
413	Oakley st.....	Madison st.....	Twelfth st.....	12,884 50
562	Dearborn st.....	Present terminus..	Jackson st..... ...	190,341 83
563	Milwaukee av.....	Inter'n of Canal st.	With W. Lake st...	114,612 00
594	W. Jackson st.....	Leavitt st.....	Hoyne st.....	10,825 65
381	Hart st....	Present N. termin's	Hubbard st.....	1,579 05
544	W. Hinsdale st.....	East.....	N. La Salle st.....	1,893 27
	Total,...			$376,110 57
Amount to be paid by city from general fund on account of above,				7,124 92

STATEMENT OF ASSESSMENTS FOR ALLEY OPENINGS & WIDENINGS.

No. of Warr'nt		Amount of Assessment.
230	Alley, B. 2, Butler, Wright & Webster's add., extending W. to Kingsbury Street,.....	$1,184 65
232	Widening Easterly part of Alley running E. & W. in S. part of Bl'k 40 O. T.,.....	180 89
233	Opening Alley, E. & W. through Bl'k 3, C. T., sub-division of W. ½ and W. ½ N. E. ¼ Sec. 17, T. 39, N. R. 14 E..	79 70
235	Opening Alley in Bl'k 1, Duncan's add., running N. & S. from Madison to Monroe st.,.....	3,627 27
315	Extension of Alley running N. & S. through Bl'k 20, Rogers' sub-division of N. E. ¼ of S. E. ¼ Sec. 4, T. 39, N. R. 14 E.	1,126 24
322	Opening Alley running N. & S. from 24th to 25th sts. and between Kankakee and Calumet aves.,.....	1,629 56
393	Extension of Alley in Bl'k 18, Rogers' sub-division of N. E. ¼ of S. E. ¼ Sec. 4, T. 39, N. R. 14 E.....	1,803 34
436	Opening Alley in Bl'k 10, Brand's add., between Halsted and Newberry sts,.....	586 78
569	Opening Alley in Bl'k 18, Duncan's add., from W. Jackson to W. VanBuren st.,.....	5,400 45
591	Opening Alleys from 16th to 18th sts. and between Prairie and Indiana aves.,.....	7,007 22
	Opening Alley in Bl'k 21, Duncan's add., from W. VanBuren to W. Tyler sts.,.....	5,341 05
	Total,.....	$27,967 15
Amount to be paid by city from general fund on account of above,		323 32

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT.

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessment.
237	Adams st	Michigan av	State st	6,818 70
316	N. Wells st	Kinzie st	Chicago av	7,898 62
317	Desplaines st	W. Van Buren st	Fourth st	122,113 90
2d 318	Van Buren st	Michigan av	State st	1,840 50
321	Michigan av	Lake st	S. Water st	3,825 66
346	Franklin st	S. Water st	Lake st	3,585 33
348	Twenty-second st	State st	Kankakee av	28,460 06
350	Franklin st	Randolph st	Madison st	10,613 15
351	N. Wells st	Kinzie st	Chicago av	52,867 91
353	Indiana av	Twenty-second st	Twenty-ninth st	47,772 96
354	W. Lake st	Halsted st	Reuben st	91,091 61
370	N. Clark st	Division st	North av	41,183 30
395	W. Adams st	Canal st	Halsted st	17,896 78
396	Sangamon st	Fulton st	W. Van Buren st	48,483 89
398	W. Adams st	Halsted st	Reuben st	59,064 14
411	Clinton st	Van Buren st	Madison st	42,742 34
412	Dearborn st	Chicago av	Division st	26,403 90
414	W. Madison st	Halsted st	Center av	51,046 11
415	Harmon Court	State st	Michigan av	8,287 56
437	Monroe st	Clark st	Market st	12,914 87
438	Jefferson st	Van Buren st	Randolph st	61,948 90
439	Adams st	State st	Market st	20,093 66
440	Pine st	Michigan st	Chicago av	20,660 30
442	N. Dearborn st	N. Water st	Chicago av	38,554 82
443	N. Wells st	Chicago av	Division st	50,438 92
444	Canal st	Twelfth st	Sixteenth st	56,902 63
486	Canal st	Madison st	Twelfth st	120,464 20
2d 532	N. Clark st	The River	Chicago av	8,967 31
537	Wabash av	Twenty-second st	Twenty-ninth st	50,873 93
538	Halsted st	C.B.& Q.R.R. cross	Archer av	95,871 24
2d 539	Milwaukee av	Desplaines st	Elston Road	7,017 88
540	Twelfth st	State st	Chicago River	31,067 75
2d 541	Indiana av	Sixteenth st	Twenty-second st	2,020 48
542	Twelfth st	State st	Michigan av	6,274 23
543	W. Washington st	W. Water st	Elizabeth st	70,828 11
2d 545	Halsted st	Lake st	Harrison st	15,002 23
2d 547	N. Clark st	Chicago av	Division st	7,645 44
2d 548	Randolph st	Halsted st	W. Water st	3,235 75
2d 549	W. Van Buren st	Canal st	Halsted st	569 43
2d 550	Blue Island av	Harrison st	Twelfth st	7,604 61
552	Huron st	N. Clark st	N. State st	11,442 02
553	Eighteenth st	Wabash av	Chicago River	45,366 34
554	Division st	Clark st	Clybourne av	27,276 50
555	Madison st	State st	Chicago River	31,044 76
556	N. Dearborn st	Division st	North av	31,085 50
558	W. Kinzie st	Halsted st	Canal st	47,778 48
559	Ohio st	St. Clair st	Clark st	27,112 82
560	Randolph st	Michigan av	Randolph st. bridge	35,430 65
561	Polk st	State st	Chicago River	30,616 86
564	Archer av	State st	Canal or Slip	108,669 38
	Total			$1,756,776 42
	Amount to be paid by city from general fund on account of above,			351,579 75

STATEMENT OF ASSESSMENT FOR MISCELLANEOUS STREET AND ALLEY IMPROVEMENTS.

No. of Warr'nt	NAME OF STREET.	Amount of Assessment.
314	Gravelling Prairie av. from 32d st. to Cottage Grove av....	$7,271 10
323	Grading Fox place " Elston road to Noble st.....	81 72
347	Curbing Monroe st. " Clark st. to Market st.....	571 85
349	Macadamizing S. Market st. from Madison to VanBuren st.	3,337 28
441	Graveling Michigan av. from 22d st. to 29th st.....	37,314 78
530	Curbing & Filling Jackson st. from Michigan av. to State st.	1,891 76
531	" " " " State st. to Market st...	22,159 78
2d 551	" " Division st. from Clybourne av. to Larrabee	824 07
557	" " Harrison st. " State st. to Wells st.	12,701 26
572	Graveling Prairie av. from Cottage Grove av. to 29th st...	30,628 59
319	Planking Court place, Bl'k 42, O. T., Franklin to Market st.	1,572 70
324	" Alley running N. & S. bet. 18th & 20th sts. and Michigan and Indiana aves.....	3,266 62
382	Planking Alley, Bl'k 15, Fractional Sec. 15, addition.....	1,747 94
383	" " " 3, " " 15, "	1,020 66
384	" " " 7, " " 15, "	1,253 87
385	" " " 22, " " 15, "	2,618 37
386	" " " 14, " " 15, "	1,764 16
387	" " " 6, " " 15, "	1,244 31
388	" " " 10, " " 15, "	1,244 63
389	" " " 18, " " 15, "	1,787 55
390	" Calhoun place, Bl'k 55, Original Town.....	1,321 83
391	" " " " 54, " "	1,903 75
392	" " " " 53, " "	1,893 00
432	" Alley, Bl'ks 13 & 18, C. T. Sub. S. E. ¼, Sec. 17,.	2,986 94
433	" " Bl'k 27, W. ½ & W. ½ N. E. ¼ Sec. 17,.	1,357 02
434	" " " 24, Original Town.....	3,511 56
435	" " S. ½ Bl'k 52, Sec. 7.....	1,938 18
529	" " N. 198 5-10 ft. bet. Halsted & Newberry and Taylor and 12th sts.....	1,237 63
533	Planking Alley, Bl'k 1, Ridgley's addition to Chicago... ..	1,914 20
534	" " " S. ½ Bl'k 54, C. T., new sub'n of Blocks in N. W. ¼, Sec. 21, T- 39 N. R. 14 E.....	771 75
546	Planking Alley, bet. Taylor & Forquer sts. and Halsted st. and Blue Island av.	3,887 81
565	Paving Alley, running N. & S., Bl'k 5, Frac. Sec. 15 add'n.	2,628 83
566	Planking Alley from Randolph st. to Benton place, and bet. Wabash av. and State st.....	786 66
567	Planking Alley, Bl'k 8, Brainard & Evans' addition.....	1,410 22
568	" " bet. Johnston & Newberry sts. and Taylor and 12th sts.....	2,618 55
570	Planking Alley, Bl'ks 123 & 124 S. S., from VanBuren to Harrison and bet. Clark st. and Fourth av.....	4,291 20
571	Planking Alley, in E. part of Bl'k 26, Johnston, Roberts & Storrs' addition.....	462 77
	Total,.....	$169,234 83
	Amount to be paid by city from general fund on account of above,	11,292 03

STATEMENT OF ASSESSMENTS FOR ERECTION OF LAMP POSTS.

No. of Warr'nt	No. Posts	NAME OF STREET.	FROM	TO	Amount of Assessments.
275	1	Indiana st.....	Rush st. and a point	120 ft. east thereof	36 00
276	17	Chicago av.....	Rucker st.....	Noble st.....	589 50
277	2	Clark st.....	N. Water st.....	Chicago River.....	72 00
278	3	Reuben st.....	W. Adams st.....	W. Jackson st.....	108 00
279	20	Halsted st.....	W. Lake st.....	W. Harrison st....	798 75
280	3	Robey st.....	W. Monroe st.....	W. Madison st.....	108 00
281	5	Market st.....	Quincy st.....	Van Buren st.....	180 00
282	9	Clark st.....	Twelfth st.....	Fourteenth st.....	324 00
283	1	Twenth-eighth..	Michigan av. and a	point 125 ft. west..	36 00
284	2	Sheldon st.....	W. Lake st.....	W. Randolph st...	72 00
285	2	Tyler st.....	Center av.....	Aberdeen st	72 00
286	3	Whitney st.....	N. Dearborn st....	N. State st.....	108 00
287	3	Chestnut place..	N. Clark st.....	N. Dearborn st....	108 00
288	3	Desplaines st...	W. Lake st.....	W. Washington st.	135 00
289	2	Whitney st....	N. Wells st. to east	terminus Whiting.	72 00
290	12	Michigan av....	Thirty-first st.....	Thirty.third st....	432 00
291	14	Prairie av.....	Twenty-ninth st...	Thirtieth st.....	495 00
292	5	Twenty-third st	Cottage Grove av..	Michigan av	180 00
293	1	N. La Salle st...	Chicago av.....	Chestnut st.....	36 00
294	2	Wendell st.....	N. Franklin st....	N. Wells st.....	72 00
295	4	Twenty-fourth..	Wabash av.....	State st.....	144 00
296	2	Oak st.....	N. Franklin st....	N. Wells st.....	72 00
297	3	Thirty-second st	State st.....	Wabash av.....	108 00
325	3	Monroe st.....	Sangamon st.....	Green st.....	108 00
326	7	Michigan st....	La Salle st.....	Kingsbury st.....	252 00
327	3	Green st.....	Jackson st.....	Van Buren st.....	108 00
328	6	State st.....	Huron st.....	Michigan st.....	216 00
329	5	State st.....	S. Water st.....	Randolph st.....	193 50
330	3	Michigan av....	The River.....	S. Water st	108 00
331	2	Hubbard court..	State st.....	Wabash av	72 00
332	4	Huron st	Pine st.....	Cass st.....	144 00
333	7	Desplaines st...	Van Buren st.....	Madison st.....	319 50
334	4	Twenty-sixth st.	Michigan av.....	Wabash av.....	144 00
335	4	Twentieth st...	Prairie av.....	Indiana av.....	144 00
336	7	W. Monroe st...	Reuben st., to a	point 118 ft. east..	252 00
337	6	Wabash av.....	Thirty-first st.....	Thirty-second st...	216 00
338	7	Monroe st.....	Clark st.....	Market st.....	265 50
339	8	Peoria st.....	W. Van Buren st..	W. Harrison st....	288 00
340	10	Twelfth st.....	Clark st.....	The bridge.....	288 00
341	14	W Twelfth st..	Canal st.....	The bridge.....	495 00
342	10	Adams st.....	Wabash av.....	Market st.....	360 00
343	12	W. Eighteenth..	Canal st.....	18th st. bridge.....	432 00
344	26	N. Franklin st..	Chicago av.....	Division st.....	936 00
345	50	State st.....	Twenty-third st...	Thirty-second st...	1,629 00
399	2	Carpenter st...	Lake st.....	Randolph st.....	72 00
400	4	Fulton st.....	Lincoln st.....	Wood st.....	140 40
401	10	Walnut st.....	Reuben st	Wood st.....	360 00
402	3	Green st.....	Randolph st	Washington st.....	108 00
403	2	Loomis st.....	Adams st.	Jackson st.....	72 00
404	2	Jefferson st.....	Jackson st.....	Van Buren st.....	72 00
405	6	Dearborn st....	N. Water st.....	Ontario st.....	216 00
			Total.....		$12,369 15
			Amount to be paid by city from general fund on account of above,		1,374 35

STATEMENT OF ASSESSMENTS FOR ERECTION OF LAMP POSTS.—CONTINUED.

No. of Warr'nt	No. Posts	NAME OF STREET.	FROM	TO	Amount of Assessment.
					12,369 15
406	3	Morgan st.....	Jackson st.....	Van Buren st.....	108 00
407	3	Thirteenth st...	State st.....	Wabash av.....	108 00
408	13	La Salle st.....	Madison st.....	Van Buren st.....	468 50
409	16	Desplaines st...	Lake st.....	Fourth st.....	558 00
410	9	Milwaukee av..	Desplaines st.....	Rucker st.....	324 00
495	5	Aberdeen st....	Van Buren st.....	Tyler st.....	180 00
496	4	Jackson st.....	Center av.....	Aberdeen st.....	144 00
497	2	Washington st..	Clinton st.....	Desplaines st.....	72 00
498	7	Tyler st.....	Morgan st.....	Aberdeen st.....	252 00
499	7	University place	Cottage Grove av..	450 ft. west thereof	144 00
500	6	Lake st.....	Leavitt st.....	Oakley st.....	216 00
501	20	W. Monroe st...	Reuben st.....	Robey st.....	684 00
502	2	Huron st.....	Wells st.....	La Salle st.....	72 00
503	2	Morgan st.....	Monroe st.....	Adams st.....	72 00
504	4	Douglas place..	Moonaway place.	330 ft. west thereof	144 00
505	4	Reuben st.....	Van Buren st.....	Tyler st.....	144 00
506	11	Division st.....	Larrabee st.....	Clybourn av.....	396 00
507	4	Elm st.....	Franklin st.....	La Salle st.....	144 00
508	6	Sangamon st...	Harrison st.....	Van Buren st.....	216 00
509	11	Ellis av.....	Douglas place.....	Wahpanseh av....	396 00
510	3	Division st.....	Dearborn st.....	State st.....	108 00
511	11	Robey st.....	Madison st.....	Jackson st.....	396 00
512	6	Van Buren st...	Morgan st.....	Aberdeen st.....	216 00
513	9	Sedgwick st....	Sophia st.....	Clark st.....	324 00
514	5	Paulina st.....	Adams st.....	Monroe st.....	180 00
515	2	Sedgwick st....	Superior st.....	Chicago av.....	72 00
516	5	Sedgwick st....	Elm st.....	Hobbie st.....	180 00
517	2	S. Ann st.....	Randolph st.....	Washington st....	72 00
518	2	Peck court.....	State st.....	Wabash av.....	72 00
519	7	Douglas place..	Cottage Grove av..	Lake av.....	252 00
520	2	Laflin st.....	Madison st.....	Monroe st.....	72 00
521	4	Twent-second st	Calumet av.....	Kankakee av.....	144 00
522	7	Lincoln st.....	Madison st.....	Adams st.....	252 00
523	2	Carpenter st....	Washington st....	Madison st.....	72 00
524	14	Hobbie st.....	Sedgwick st.....	Crosby st.....	494 00
525	7	Honore st.....	Monroe st.....	Jackson st.....	252 00
526	1	Market st.....	Kinzie st.....	Michigan st.....	36 00
527	7	Newberry st....	Twelfth st.....	Taylor st.....	252 00
528	40	Halsted st.....	Sixteenth st.....	Chicago River.....	1,314 00
535	27	Halsted st.....	Twelfth st.....	Sixteenth st.....	904 50
536	51	N. Clark st.....	Fullerton av.....	North av.....	1,836 00
			Total.....		$24,707 15
		Amount to be paid by city from general fund on account of above,			2,746 35

Statement of Assessments for construction of Private Drains.

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessments.
465	Adams st.....	Michigan av.....	Market st.....	$574 00
466	Archer av	Stewart "	State "	754 22
467	Prairie "	Twenty-second st..	Cottage Grove av..	223 10
468	State st.....	Michigan st.....	Chicago av.....	531 76
469	Desplaines st.....	Fourth "	VanBuren st.....	1,178 95
470	Pine "	Michigan "	Chicago av.....	334 84
471	Sangamon "	Kinzie "	VanBuren st.....	751 28
472	Huron "	Clark "	Dearborn "	118 68
473	Monroe "	Market "	State "	900 16
474	Ohio "	St. Clair "	N. Clark "	911 38
475	N. Clark "	Chicago av.....	Division "	1,236 73
476	Harmon court.....	State st.....	Michigan av.....	160 00
477	Franklin st.....	S. Water st.....	Madison st.....	307 40
478	Blue Island av.....	Harrison "	Twelfth "	1,035 00
479	Griswold st.....	VanBuren st.....	Polk "	431 75
480	W. VanBuren st...	The River.....	Halsted "	1,179 02
481	Sherman " ..	VanBuren st.....	Harrison"	204 75
482	Twenty-second" ..	The Lake.....	State "	487 00
483	W. Adams " ..	Canal st.....	Halsted "	368 00
484	Halsted " ..	Harrison st.....	Rail Road Crossing	1,223 50
485	Michigan " ..	N. Clark st.....	Kingsbury st.....	639 58
		Total,.....		$13,551 10
	mount to be paid by city from general fund on account of above,			140 85

Statement of Assessments for construction of Water Service Pipes.

o. of arr'nt	NAME OF STREET.	FROM	TO	Amount of Assessments.
369	Halsted st.....	Harrison st.....	C. B. & Q. R. R. Crossing.	$2,650 67
375	N. Clark st.....	Chicago av.....	Division st.....	2,030 00
376	W. Adams st.....	Canal st.....	Halsted "	371 44
377	Michigan "	N Clark st.....	Kingsbury st.....	1,021 70
378	N. State "	Michigan"	Chicago av.....	932 90
379	W. VanBuren.....	Canal "	Halsted st.....	857 43
493	Twenty-second st..	State "	Kankakee av.....	779 55
494	Prairie av.....	Twenty-second st..	Cottage Grove av..	258 88
		Total,...		$8,902 57
	Amount to be paid by city from general fund on account of above,			81 75

Statement of Assessments for construction of Gas Service Pipes.

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessments.
487	Halsted st.....	Twelfth st.....	Sixteenth st..	$352 75
488	W. Adams st.....	Canal st.	Halsted st.....	62 25
489	Halsted st., bet. Polk st.	and S. line, N. ½ Block 21,	C. T. Subd'n E. ¼, Sec. 17	269 75
490	W. Washington st..	Halsted st.....	Clinton st.....	113 25
491	Halsted st.....	Twelfth st.....	Sixteenth st.....	63 00
492	Blue Island av.....	Harrison st.....	Twelfth st.....	448 50
		Total,.....		$1,309 50
	Amount to be paid by city from general fund on account of above,.			18 00

SUMMARY.

TOTAL ASSESSMENT FOR STREET OPENINGS AND WIDENINGS.

North Division		$ 7,554 65	
South Division		206,810 19	
West Division		161,745 73	
			$376,110

TOTAL ASSESSMENT FOR ALLEY OPENINGS AND WIDENINGS.

North Division		$ 4,114 23	
South Division		8,817 67	
West Division		15,035 25	
			27,967

TOTAL ASSESSMENT FOR WOODEN BLOCK PAVEMENT.

North Division	4.65 miles,	351,537 36	
South Division	7.48 "	581,448 07	
West Division	9.28 "	823,790 99	
			1,756,776

TOTAL ASSESSMENT FOR MISCELLANEOUS STREET AND ALLEY IMPROVEMENTS.

North Division	3,201 04	
South Division	146,222 41	
West Division	19,801 38	
		169,224

TOTAL ASSESSMENT FOR ERECTION OF LAMP POSTS.

North Division	167 posts,	$ 6,002 00	
South Division	205 "	7,042 50	
West Division	327 "	11,662 65	
			24,707

TOTAL ASSESSMENT FOR CONSTRUCTION OF PRIVATE DRAINS.

North Division	$3,241 21	
South Division	4,142 39	
West Division	6,167 50	
		13,551

TOTAL ASSESSMENT FOR CONSTRUCTION OF WATER SERVICE PIPES.

North Division	$3,984 60	
South Division	1,038 43	
West Division	3,879 54	
		$8,902 57

TOTAL ASSESSMENT FOR CONSTRUCTION OF GAS SERVICE PIPE.

North Division		
South Division		
West Division	$1,309 50	
		1,309 50

TOTAL ASSESSMENT FOR CONSTRUCTION OF SIDEWALKS.

North Division	$ 720 12	
South Division	7,599 95	
West Division	8,813 67	
		17,133 74
Total amount of assessment for North, South and West Divisions,		$2,395,683 03
Total amount of assessment for street improvements in the North Division	$380,355 21	
Total am't payable out of "Appropriation Fund" on account of street improvements in North Division,	91,002 30	
Total estimated cost of street improvements in the North Division,		471,357 51
Total amount of assessments for street improvements in the South Division	$963,121 61	
Total am't payable out of "Appropriation Fund" on account of street improvements in South Division,	124,418 03	
Total estimated cost of street improvements in the South Division,		1,087,539 64
Total amount of assessments for street improvements in the West Division	$1,052,206 21	
Total am't payable out of "Appropriation Fund" on account of street improvements in the West Division,	158,065 01	
Total estimated cost of street improvements in the West Division		1,210,271 22
Total estimated cost of street improvements in the North, South and West Divisions		$2,769,168 37

TO BE PAID FROM "APPROPRIATION FUND" FOR STREET IMPROVEMENTS.

The North Division	$ 91,002 30	
The South Division	124,418 03	
The West Division	158,065 01	
		373,485 34
Total		$373,485 34

The following is a statement of the amount of work done on account of street improvements, provided for by the assessments of the year ending April 1st, 1869:

Whole number of cords of Curb Wall	85,502 53-100
Whole number of lineal feet of Curb Stone	105,163 98-100
Whole number of cubic yards of Filling	314,203 46-100
Whole number of cubic yards of Excavating and Grading	80,811 6-100
Whole number of square yards of Wooden Block Paving	569,940 72-100
Whole number of miles of Wooden Block Pavement	21 41-100
Whole number of cubic yards of Graveling	8 738 30 100

Total number of Lamp Posts provided for by assessment:

IN THE NORTH DIVISION,		
From April 1st, 1868, to April 1st, 1869	167	
Posts erected prior to April 1st, 1868	860	
		1,027
IN THE SOUTH DIVISION,		
From April 1st, 1868, to April 1st, 1869	205	
Posts erected prior to April 1st, 1868	1206	
		1,411
IN THE WEST DIVISION,		
From April 1st, 1868, to April 1st, 1869	327	
Posts erected prior to April 1st, 1868	1531	
		1858
Total number of Lamp Posts in the city		4296

During the past year there has been prepared and sent to the Council the following number of Ordinances in connection with the Special Assessment business of the Board:

For Street Improvements	117
For Alley Improvements	49
For Miscellaneous Improvements	39
For Sidewalks	237
For the erection of Lamp Posts	135
For the construction of Private Drains	50
For laying Water Service Pipe	34
For laying Gas Service Pipe	9
For Street and Alley openings and widenings	55
Total	725

The following list shows the total amount of assessments made in each year, by the Board of Public Works, since it was created in 1861:

For the year ending April 1st, 1862	$ 42,635 49	
For the year ending April 1st, 1863	46,493 67	
For the year ending April 1st, 1864	389,169 31	
For the year ending April 1st, 1865	103,576 35	
For the year ending April 1st, 1866	802,574 56	
For the year ending April 1st, 1867	317,206 18	
For the year ending April 1st, 1868	1,354,436 48	
For the year ending April 1st, 1869	2,395,683 03	
		5,451,775 07
Total for eight years		$5,451,775 07

NOTE.—A large share of the Sidewalks, Drains, Gas and Water Service Pipes, provided for by Ordinances, has been constructed by private parties, at their own expense, and no assessment has been made for such portion.

Respectfully submitted,

F. H. BAILEY,

In charge of Special Assessments.

SIDEWALKS.

MR. A. W. TINKHAM,

Secretary of the Board of Public Works.

SIR: The undersigned respectfully presents his report relating to the construction and reconstruction of sidewalks, from April 1, 1868, to March 31, 1869, under the following ordinances:

NORTH DIVISION.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	BUILT EXCEPT
S. S.	Ohio st.	N. Market st.	Kingsbury st.	610	All
B. S.	Haines st.	Larrabee st.	Crosby st.	610	"
B. S.	Elm st.	Larrabee st.	N. Wells st.	2,200	"
N. S.	Goethe st.	N. Clark st.	N. Wells st.	750	"
S. S.	Belden av.	Orchard st.	N. Halsted st.	625	"
N. S.	Illinois st.	St. Clair st.	Seneca st.	300	"
S. S.	Belden av.	Larrabee st.	N. Clark st.	1,067	"
S. S.	Elm st.	N. Franklin st.	N. Wells st.	310	"
B. S.	N. Halsted st.	The Bridge	N. Branch st.	400	"
B. S.	Sedgwick pl.	Division st.	Elm st.	566	"
S. S.	Oakwood st.	Rush st.	Lake Michigan	833	"
B. S.	Hill st.	N. Franklin st.	N. Wells st.	620	"
B. S.	Burton place	N. Clark st.	N. Dearborn st.	596	"
S. S.	Belden av.	Orchard st.	N. Franklin st.	2,177	"
S. S.	North av.	Halsted st.	Larrabee st.	1,139	"
W. S.	Vine st.	North av.	Willow st.	974	"
B. S.	Haines st.	Crosby st.	Hawthorn av.	500	"
E. S.	State st.	Division st.	Grand Haven	615	"
S. S.	Division st.	Larrabee st.	Hawthorn av.	1,144	"
E. S.	Church st.	Center st.	Wisconsin st.	594	"
S. S.	Indiana st.	Market st.	N. Branch	943	"
N. S.	N. Branch st.	Halsted st.	Bliss st.	856	"
E. S.	Hurlbut st.	Black Hawk st.	North av.	580	"
B. S.	N. LaSalle st.	North av.	N. Clark st.	1,585	"
S. S.	Michigan st.	N. Market st.	Kingsbury st.	343	"
W. S.	Church st.	Menominee st.	Linden st.	72	"
W. S.	Pleasant st.	Vedder st.	Division st.	22	"
S. S.	Grant place	Sedgwick st.	Larrabee st.	1,136	"
W. S.	Rush st.	Chicago av.	Hinsdale st.	455	"
			Total	22,622	

SOUTH DIVISION.

STREET.	FROM	TO	NO. OF FEET.	BUILT	EXCEPT.
rty-second	State st.	Burnside st.	250	Built	
nside st.	Thirty-second	Thirty-third	550	"	
irie av.	Twenty-ninth	Thirty-first	1,121	"	
teenth st.	Indiana av.	Prairie av.		"	
ckwell st.	Eighteenth st.	Twentieth st.	725	"	
hpanseh av.	Stewart av.	State st.	2,600	"	
rty second	Indiana av.	State st.	2,500	"	
nside st.	27th st.	Thirty-second	5,218	"	
irie av.	Twenty-ninth	Thirty-first	1,200	"	
rtieth st.	State st.	Indiana av.	1,033	"	
enty-fifth st.	State st.	Wabash av.	383	"	
bash av.	Thirty-first st.	Thirty-second	1,372	"	
ler st.	Archer av.	Hickory st.	1,152	"	ex. 76 ft.
ridan place	Purple st.	Wentworth av.	1,154	"	
hnell st.	Wentworth av.	Hanover st.	3,172	"	
irie av.	Sixteenth st.	Twenty-second	2,405	"	
cennes av.	Wahpanseh av.	Douglas place	1,287	"	
irie av.	Thirty first st.	Thirty-third st.	1,272	"	
irie av.	Douglas place	S. Line, B. 4 in Dyer & Davidson's Sub.	766	"	
old st.	27th st.	Thirty-first st.	1,997	"	
umet av.	Twenty-second	Twenty-ninth	2,407	"	
alle st.	Jackson st.	Van Buren st.	734	"	
enty-ninth	State st.	Wentworth av.	999	"	
adway av.	S. Line L. 2	So. Terminus	284		
iversity pl.	Cottage Gr. av.	Rhodes av.	724	"	
nkakee av.	Wahpanseh av	Douglas place	1,294	"	
enty-fourth	State st.	Clark st.	606	"	
tage Gr. av.	Twenty-ninth	Egan av.	6,666	"	ex. 636 ft.
rrison st	Franklin st.	Wells st.	640	"	ex. 640 ft.
rthern av.	Cottage Gr. av.	R. R. Station	565	"	ex. 103 ft.
enty-ninth	Indiana av.	Calumet av.	730	"	
irty-second	Burnside st.	Butterfield st.	420	"	
nkakee av.	Northern av.	Cottage Gr. av.	298	"	
isted st.	Archer av.	Egan av.	7,435	"	partly.
cher av.	Lime st.	Quarry st.	896		not built.
in st.	South Branch	Thirty-first st.	3,789	"	
rtieth st.	Kankakee av.	Cottage Gr. av.	668	"	
irty-second	Indiana av.	State st.	2,053	"	
Gregor st.	Butler st.	Wentworth av.	748	"	
ger st.	Archer av.	Twenty-Sixth	970	"	
chigan av.	Thirty-second	Douglas place	1,785	"	
poleon pl.	Buddan st.	Wentworth av.	600	"	
kory st.	Main st.	Deering st.	1,985	"	
ntworth av.	Sixteenth st.	Thirty-first st.	7,080	"	partly.
llace st.	McGregor st.	Twenty-sixth	750	"	
Gregor st.	Butler st.	Wallace st.	373	"	
ke av.	Douglas place	Egan av.	2,440	"	ex. 421 ft.
tterfield st.	27th st.	Thirty-third st.	6,072	"	ex. 725 ft.
nold st.	Thirty-first st.	Thirty-third st.	1,258	"	
ering st.	Archer av.	R. R. Crossing	345		ex. 25 ft.
ck st.	Archer av.	Fuller st.	899		not built.
ck st.	Archer av.	Thirty-first st.	738		½ built.
ney av.	Archer av.	Thirty-first st.	1,796	"	
enty-fifth st.	Sanger st.	Stewart av.	516		not built.

SOUTH DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	BUILT	EXCEPT
N. S.	Twentieth st.	Wentworth av.	Grove st.	787	Built	ex. 130 ft
B. S.	Purple st.	Nineteenth st.	Archer av.	1,863		partly.
N. S.	Nineteenth st.	State st.	Blackwell st.	1,135	"	ex. 134 ft
E. S.	Sanger st.	Archer av.	Twenty-sixth	970	"	ex. 330 ft
W. S.	Shurtleff av.	Twenty-sixth	Napoleon pl.	925	"	ex. 250 ft
S. S.	Twenty sixth	State st.	Wentworth av.	1,290	street not opened	
N. S.	Archer av.	South Branch	Beers st.	1,928		partly.
E. S.	Bonfield st.	R. R. Crossing	Hickory st.	366		"
B. S.	Joseph st.	Archer av.	Hickory st.	1,600		"
E. S.	Farrell st.	Archer av.	R. R. Crossing	398		"
E. S.	Murray st.	Twenty sixth	Archer av.	635		ex. 180 ft
S. S.	Nineteenth st.	Purple st.	Blackwell st.	216		not built.
E. S.	State st.	Douglas place	Egan av.	2,228		" "
				111,935		

WEST DIVISION.

SIDE.	STREET.	FROM	TO	Frontage.	BUILT	EXCEPT
S. S.	Warren av.	Hoyne st.	Leavitt st.	600	Built.	
S. S.	Warren av.	Oakley st.	Western av.	600	"	
S. S.	Walsh st.	Halsted st.	Center av.	7,170	"	
B. S.	Dobyn st.	Waller st.	Blue Island av.	1,400	"	
E. S.	Elizabeth st.	Hunt st.	Fourth st.	250	"	
S. S.	Hunt st.	Rucker st.	Elizabeth st.	500	"	
W. S.	Elizabeth st.	W. Indiana st.	Fourth st.	400	"	
S. S.	Fourth st.	Rucker st.	Elizabeth st.	500	"	
E. S.	Lessing st.	Chicago av.	Front st.	310	"	
B. S.	Monroe st.	Reuben st.	Leavitt st.	7,000	"	
N. S.	Harbine st.	Blue Island av.	Lincoln st.	1,700	"	
S. S.	First st.	Noble st.	Reuben st.	1,200	"	
E. S.	Ada st.	Fulton st.	Kinzie st.	623	"	
W. S.	Ada st.	Kinzie st.	Hubbard st.	309	"	
E. S.	Loomis st.	Van Buren st.	Tyler st.	334	"	
N. S.	Jackson st.	Lincoln st.	Hoyne st.	946	"	
B. S.	Morgan st.	Tyler st.	Van Buren st.	723	"	
W. S.	Paulina st.	Cornelia st.	Emily st.	840	"	
N. S.	Polk st.	Loomis st.	Laflin st.	598	"	
N. S.	Tyler st.	Peoria st.	Aberdeen st.	1,104	"	
E. S.	Hoyne st.	Adams st.	Van Buren st.	757	"	
N. S.	Park av.	Leavitt st.	Oakley st.	598	"	
N. S.	Clybourn pl.	Elston Road	Wood st.	1,455	"	
B. S.	Emma st.	Milwaukee av.	West terminus	1,402	"	
N. S.	W. 22d st.	Blue Island av.	Robey st.	2,400	"	
W. S.	Blue Island av.	Harbine st.	W. 22d st.	1,310	"	
W. S.	Leavitt st.	Lake st.	Park av.	212	"	
B. S.	Hamilton st.	Monroe st.	Jackson st.	1,950	"	
W. S.	Burlington st.	W. Sixteenth	W. Eighteenth	769	"	
W. S.	Paulina st.	Carroll st.	Kinzie st.	248	"	
E. S.	Johnson st.	W. Twelfth st.	Maxwell st.	820	"	

WEST DIVISION—CONTINUED.

STREET.	FROM	TO	Frontage.	BUILT	EXCEPT.
nchester st.	W. Adams st.	Van Buren st.	746	Built.	
n Buren st.	Hoyne st.	Robey st.	1,111	"	
rnelia st.	Milwaukee av.	Reuben st.	1,860	"	
ley av.	Adams st.	Van Buren st.	760	"	
ilina st.	Cornelia st.	Emily st.	800	"	
rch st.	Fulton st.	Kinzie st.	618	"	
herine st.	Canal st.	Stewart av.	520	"	
cago av.	Carpenter st.	Chi. av. Bridge	2,174	"	
Water st.	Madison st.	Randolph st.		not built.	
erdeen st.	Damon st.	W. Twelfth st.	2,316	built	ex. 100 ft.
Reuben st.	Milwaukee av.	Clybourn place	3,815	"	
Sixteenth	Blue Island av.	Laflin st.	1,037	"	
teenth st.	Center av.	Halsted st.	2,520	"	
rley st.	Sholto st.	Miller st.	204	"	
braska st.	Loomis st.	Laflin st.	600	"	
bey st.	Madison st.	Harrison st.	192	"	
wn st.	Twelfth st.	Sixteenth st.	2,400	"	
erty st.	Jefferson st.	Canal st.	1,432	"	
tley st.	Kinzie st.	Fourth st.	1,025	"	
coln st.	Jackson st.	Adams st.	375	"	
ams st.	Robey st.	Honore st.	799	"	
nchester st.	Jackson st.	Adams st.	367	"	
ams st.	Hoyne st.	Leavitt st.	1,038	"	
nroe st.	Loomis st.	Leavitt st.	1,200	"	
ller st.	Mitchell st.	Twelfth st.	1,210	"	
ilina st.	Division st.	Emily st.	700	"	
lin st.	Taylor st.	Sampson st.	136	"	
ilina st.	Chicago av.	Kinzie st.	2,060	"	
kson st.	Reuben st.	Honore st.	1,175	"	
kson st.	Wood st.	Lincoln st.	335	"	ex. 75 ft.
vitt st.	Jackson st.	Madison st.	1,155	"	ex. 145 ft.
cker st.	Indiana st.	Second st.	915	"	
ion st.	Sixteenth st.	Twenty-second	2,343	"	ex. 350 ft.
nour st.	Chicago av.	Second st.	495	"	
erson st.	Canalport av.	Lumber st.	1,401	"	ex. 250 ft.
ary st.	Blue Island av.	E. Terminus of Henry	2,400	"	ex. 1,011 ft.
ision st.	Milwaukee av.	Houghton st.	858	"	
nalport av.	Jefferson st.	Union st.	723		not built.
iana st.	Lincoln st.	Robey st.	600	"	ex. 192 ft.
coln st.	Lake st.	Washington st.	717	"	
n Buren st.	Reuben st.	Robey st.	1,983	"	
herine st.	Throop st.	Laflin st.	1,200	"	
kson st.	Loomis st.	Reuben st.	1,160	"	
k st.	Morgan st.	Sholto st.	450	"	
yne st.	Madison st.	Warren av.	266	"	
ilina st.	Jackson st.	Van Buren st.	396	"	ex. 100 ft.
ond st.	Paulina st.	Reuben st.	600	"	
ch st.	Polk st.	Harrison st.	713	"	
le st.	Taylor st.	Twelfth st.	761	"	ex. 136 ft.
cker st.	Indiana st.	Kinzie st.	628	"	
ton st.	Leavitt st.	Western av.	1,052	"	
ilina st.	Second st.	W. Erie st.	248	"	
sing st.	Chicago av.	George st.	684	"	
th st.	Front st.	To terminus	499	"	

WEST DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	Frontage.	BUILT	EXCE
W. S.	Morgan st.	Twelfth st.	Sixteenth st.			Not bu
S. S.	Catherine st.	Throop st	Loomis st.			" "
E. S.	Center st.	Twelfth st.	Blue Island av.			" "
B. S.	Ann st.	Kinzie st.	Carroll st.			" "
N. S.	Mitchell st.	Blue Island av.	Waller st.			" "
E. S.	Ruble st.	Sixteenth st.	Eighteenth st.			" "
S. S.	Washington st.	Leavitt st.	Western av.			" "
E. S.	Paulina st.	Jackson st.	Madison st.			" "
				98,600		

To properly understand the business of this department, t following monthly reports of work are shown:

	Gross Amount.	New Walk.	
April	27,296 ft.	13,969 ft.	
May	49,375 "	25,638 "	
June	54,713 "	23,807 "	
July	49,454 "	19,062 "	
August	41,999 "	18,869 "	
September	34,854 "	16,232 "	
October	48,631 "	24,941 "	
November	33,233 "	19,305 "	
December	16,755 "	13,647 "	
January	15,445 "	10,791 "	
February	8,381 "	4,338 "	
March	6,961 "	4,727 "	
Total	387,097 ft.	195,326 ft.	Total extend

Equal to $73\frac{7}{10}$ miles constructed and reconstructed dr year, leaving now in charge of this department, 470 mi

ewalks Assessed and Built by Contractor.

WEST DIVISION.

STREET.	FROM	TO	NO. OF FEET.	COST.
Fay st.	W. Erie st.	Pratt st.	568	$ 231.85
Ann st.	Fulton st.	Carroll st.	48	19.68
Paulina st.	Chicago av.	Clarinda st.	122	50.02
Chicago av.	Milwaukee av.	Carpenter st.	100	42.00
Warren av.	Leavitt st.	Oakley st.	67½	27.67
Taylor st.	Throop st.	Loomis st.	150	63.00
Newberry st.	Lot 30, B. 11	Wright st.	175	73.50
Mitchell st.	Blue Island av.	Waller st.	192	78.72
Maxwell st.	Blue Island av.	Johnson st.	348	146.16
May st.	Evans st.	Twenty-second	160	65.60
Cornell st.	Noble st.	Reuben st.	25	10.25
Indiana st.	Wood st.	Lincoln st.	24	10.08
North av.	Milwaukee av.	Elston road.	343	140.63
Frank st.	Waller st.	Blue Island av.	384	157.44
Ridgeville road.	Elk st.	Blackhawk st.	72	29.52
Hubbard st.	Elizabeth st.	Western av.	459	187.98
Center av.	Blue Island av.	Sixteenth st.	131	53.71
Nebraska st.	Throop st.	Loomis st.	25	10.50
Kansas st.	Throop st.	Loomis st.	25	10.50
Fulton st.	Hoyne st.	Robey st.	30	12.30
Indiana st.	Reuben st.	Paulina st.	24	10.08
Wallace st.	Twelfth st.	Maxwell st.	27	11.34
Pratt st.	Halsted st.	Sangamon st.	180	75.60
Wabansia av.	Elston road.	Milwaukee av.	622½	255.22
Dickson st.	Division st.	North Terminus	33	13.53
Smart st.	Kinzie st.	Hubbard st.	50	20.50
Oakley st.	Kinzie st.	Madison st.	175	71.75
Reuben st.	Milwaukee av.	Blackhawk st.	168	68.40
Van Buren st.	Hoyne st.	Robey st.	238½	97.78
Hamilton st.	Monroe st.	Jackson st.	135½	55.55
Morgan st.	Tyler st.	Van Buren st.	177	72.57
Monroe st.	Reuben st.	Leavitt st.	103½	42.43
Jackson st.	Lincoln st.	Hoyne st.	257	105.37
Park av.	Leavitt st.	Oakley st.	30	12.30
Tyler st.	Peoria st.	Aberdeen st.	133	54.53
Polk st.	Loomis st.	Laflin st.	192	78.72
Ada st.	Fulton st.	King'e st.	115	47.15
Lessing st.	Chicago av.	Front st.	56	22.96
Dobyn st.	Waller st.	Blue Island av.	113	46.33
Adams st.	Loomis st.	Reuben st.	149	61.09
Johnson st.	Twelfth st.	Maxwell st.	48	20.50

WEST DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
W. S.	Winchester st.	Adams st.	Van Buren st.	306	$125.46
S. S.	First st.	Noble st.	Reuben st.	26	10.25
E. S.	Paulina st.	Cornelia st.	Emily st.	100	41.00
W. S.	Lessing st.	Chicago av.	George st.	57½	23.58
B. S.	Emma st.	Milwaukee av.	West terminus	248	101.68
E. S.	Perch st.	Fulton st.	Kinzie st.	90	36.90
S. S.	Nebraska st.	Loomis st.	Laflin st.	211	86.51
S. S.	Adams st.	Robey st.	Honore st.	48	19.68
W. S.	Reuben st.	Milwaukee av.	Clybourn place	336	149.86
W. S.	Nutt st.	Sixteenth st.	South terminus	144	59.04
N. S.	Clybourn place	Elston road	Wood st.	556	227.96
S. S.	Sixteenth st.	Centre av.	Halsted st.	298	122.18
E. S.	Robey st.	Madison st.	Harrison st.	309½	126.90
E. S.	Waller st.	Mitchell st.	Twelfth st.	486	201.27
E. S.	Laflin st.	Taylor st.	Sampson st.	433	176.53
			Total,	9,122½	$4,173.63

NORTH DIVISION.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
W. S.	Vine st.	North av.	Willow st.	253	$75.90

SOUTH DIVISION.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.	
W.S.	Wabash av.	Thirty-first st.	Thirty-second	50	$ 20.50	
W.S.	Prairie av.	Twenty-ninth	Thirty-first st.	25	10.20	
N. S.	Twenty-fifth	State st.	Wabash av.	175	71.75	
S. S.	Twenty-fifth	Sanger st.	Wallace st.	48	19.68	
W.S.	Stewart av.	Archer av.	Twenty-fourth	75	30.75	
S. S.	Twenty-fourth	State st.	Butler st.	525	215.25	
S. S.	Twenty-sixth	State st.	Michigan av.	187	76.67	
B. S.	Burnside st.	27th st.	Thirty-second	525	215.25	
B. S.	State st.	Twenty-eighth	Douglas place	556	227.96	
W.S.	Wentworth av.	Thirty-first st.	Thirty-third st.	125	51.25	
N. S.	Douglas place	Indiana av.	Wentworth av.	68	28.98	City.
N. S.	Douglas place	Indiana av.	Wentworth av.	659	270.19	
S. S.	Douglas place	Cottage Gr. av.	Lake av.	168	68.88	
W.S.	Prairie av.	Douglas place	Lot 4 in D. & D.'s Sub.	170	69.70	
W.S.	Indiana av.	Thirty-second	Egan av.	481	214.93	
W.S.	Calumet av.	Twenty-sixth	Thirty-first st.	136	55.76	
E. S.	Calumet av.	22d st.	Twenty-ninth	250	102.50	
E. S.	Kankakee av.	Twenty-ninth	Thirty-first st.	216	91.26	
N. S.	Twenty-ninth	State st.	Wentworth av.	134	54.28	
N. S.	Twenty-ninth	Indiana av.	Calumet av.	108	44.28	
E. S.	Arnold st.	27th st.	Thirty-first st.	552	226.32	

SOUTH DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
B. S.	Sheridan place	Purple st.	Wentworth av.	490	$ 147.00
W.S.	Burnside st.	Twentieth st.	Twenty-first st.	25	10.25
S. S.	McGregor st.	Wallace st.	Sanger st.	50	20.50
E. S.	Calumet av.	Twenty-sixth	Twenth-ninth	26	10.66
W.S.	Butler st.	Twenty-sixth	McGregor st.	391	160.31
E. S.	Broadway st.	Lot A., D.'s	S. Terminus	274	112.34
B. S.	Bushnell st.	Wentworth av.	Hanover st.	474	194.34
W.S.	Main st.	Thirty-first st.	South Branch	562	230.42
S. S.	University pl.	Cottage Gr. av.	Rhodes av.	208	85.28
			Total,	8,733	$3,250.19

STONE, CONCRETE, GRAVEL AND BRICK WALKS.

It is deemed a matter of satisfaction to ascertain the accurate measurement of all Stone, Concrete, Gravel and Brick walks in the city at this date.

The following streets indicate the location of the same:

NORTH DIVISION.

STREET.	STONE.	CONCRETE.	GRAVEL	BRICK.
	FEET.	FEET.	FEET.	FEET.
Michigan Street	555			
N. Wells Street	125			
Kinzie Street	775			
La Salle Street	300			
N. Dearborn Street	200			
Rush Street	1275	428		
N. Water Street	150			
Cass Street	385	400		
N. Clark Street	675		192	
Indiana Street	250			
Ohio Street	625			
N. State Street	115		673	25
Ontario Street	80			
Huron Street	325			
Pine Street	225	100		
Superior Street	200			
Chicago Avenue	180			
Oak Street	100			
Erie Street	700			
Sophia Street			83	
N. Franklin Street			50	
Asylum Place			325	
Total	7240	928	1323	25

SOUTH DIVISION.

STREET.	STONE.	CONCRETE.	GRAVEL.	BRICK.
	FEET.	FEET.	FEET.	FEET.
Central Avenue	925			
Michigan Avenue	7090	31		
Wabash Avenue	6470	104		
Dearborn Street	2930			
State Street	2209			
Clark Street	3399			
LaSalle Street	2486			
Wells Street	1313			
Franklin Street	386			
Market Street	200			
Third Avenue	25			
Griswold Street	78			
Sherman Street	78			
Customs Place	200			
River Street	353			
South Water Street	3265			
Lake Street	4265			
Randolph Street	3825			
Washington Street	2631			
Madison Street	1068			
Monroe Street	697			
Adams Street	171			
Jackson Street	333			32
Van Buren Street	870			
Congress Street	50			
Harrison Street	182			
Indiana Avenue	811			
Prairie Avenue	685			
Calumet Avenue	50			
Park Row	330			
Sixteenth Street	138			
Hubbard Court	140			
Eldridge Court	140			
Twelfth Street	200			
S. Reuben Street			255	
Ellis Avenue			298	
Deering Street				25
Total	48013	135	553	57

WEST DIVISION.

STREET.	STONE.	CONCRETE.	GRAVEL.	BRICK.
	FEET.	FEET.	FEET.	FEET.
Aberdeen Street	261			
Adams Street	348			
Monroe Street	176			
Morgan Street			546	
Sangamon Street	122		375	
Tyler Street			255	
Brown Street				25
Madison Street	50			
W. Washington Street	1699			
Throop Street	201			
W. Lake Street	43			
W. Randolph Street	209			
Park Avenue	235			
Wood Street	312			
Willard Place	409			
Curtis Street	188			
Halsted Street	165			
South Western Avenue	260			
Sheldon Street	233			
Union Street	96			
Total	5007		1176	25

RECAPITULATION.

DIVISION.	STONE.	CONCRETE.	GRAVEL.	BRICK.
	FEET.	FEET.	FEET.	FEET.
North Division	7240	928	1323	25
South Division	48013	135	553	57
West Division	5007		1176	25
Totals	60260	1063	3052	107

SUMMARY STATEMENT.

Total number of miles of all kinds of walks	470
" " " feet of stone walks	60,260
" " " " wood walks	2,407,118
" " " " concrete walks	1,063
" " " " cinder and gravel walks	3,052
" " " " brick walks	107

The foregoing exhibit of plank walks now laid in the city, suggests the importance of introducing a substitute, which in the long run will prove cheaper and safer to the public. A concrete material, used extensively in Eastern cities, has recently been introduced here, and gives satisfactory evidence of a desirable improvement as to economy, cleanliness, and being without seam. Samples of it may be seen in the North Division, which have the test of the frosts of two winters. It does not appear to have cracked or slackened, but exhibits an increased hardness and smooth surface. It is better than stone for cheapness, never polishes by use, therefore assures greater safety to the pedestrian. This material should be laid on all streets improved to grade, and recommended in all parts of the city where streets are nearly at grade. On such streets, the sidewalk portion might be graded at comparatively little expense, thereby realizing a uniform level improvement, so much needed throughout the city.

Respectfully submitted,

J. L. HANCHETTE,
Supt. of Sidewalks.

BRIDGES.

Three pivot bridges were constructed during the year; at Twelfth street, Throop street and Division street.

The work of the year includes also under this head a long needed improvement, the viaduct at North Wells street, by which all travel passes above the trains of the North-Western Railway. The bridge portion is an iron trussed bridge of the kind known as the Truesdell patent.

The contrast is very great between the street as raised, in its present safe and commodious state, and its former condition at the level of the tracks, with trains passing every little while, obstructing and endangering the travel.

There is a growing conviction that all of the great thoroughfares should pass under or above any railroad traversing them.

The construction of a bridge at Indiana street, with a viaduct over the railway tracks, was commenced during the year, and steps taken for a similar construction at Adams street.

PUBLIC BUILDINGS.

Two important public edifices were commenced this year: the City Hall and the new Bridewell.

The space afforded to the city in the County Court House has been so limited that for years several of the departments have been obliged to seek offices elsewhere, and the Boards of Police, Education and Public Works are now located in private buildings, each by itself. As each department necessarily has intercourse with all the others, and a person having public business to transact generally has to deal with more than one department, it is desirable that all the general city offices should be grouped together in one building. Such accommodations it is expected will be afforded by the new City Hall. By an agreement with Cook County, made by your honorable body, the County and City have in process of erection, wings on the east and west fronts of the Court House, which, with the old part as it is to be improved, are designed to afford sufficient room both for the County and City officers. By the agreement referred to, the city has possession of the west half of the entire building. The county will occupy the east half.

During the year now reported on, not much progress was made on the building itself, excepting to lay the foundations.

On the Bridewell, work was commenced only. Contracts have been made for the erection of the main building, containing the cells for the prisoners, with wings for quarters for officers, and for the kitchen, dining room, &c. The workshops have not been placed under contract. It was thought that the labor of the convicts could be profitably employed in their erection. The work for this institution will also include the dredging of a channel up the west fork of the South Branch to the Bridewell Grounds.

Several new buildings were erected for the Boards of Police and Education.

olice Station was erected at the corner of Madison and streets, and an Engine House on Sanger street between gor and Twelfth streets. Both buildings are in use.
ng the year there were finished the fine four story brick Houses known as the Clark and Franklin School Houses. ther public buildings there was no unusual expenditure, in the case of the North Market, which had been partially ed by fire, and which was roofed over and repaired.

PUBLIC PARKS.

Such advance was made during the year both on Lincoln Park and Union Park that before the close of the season they had become quite attractive. With the additional inducement of music, afforded on certain days through private liberality, the first named park was at times thronged with visitors. The general testimony of the citizens is that no expenditures give returns affording more general satisfaction than the comparatively small outlay on the public parks.

A contract was executed early in the year with Messrs. Nelson and Benson, the original contractors on Lincoln Park, for the grading and shaping of that part of the park (according to the original plan) not hitherto graded, for a large number of evergreen trees, for a drive connecting the park and cemetery, and for sodding and miscellaneous work as should be directed by the Board. This work has been in progress during the year. The park has, however, been visited by such large numbers of persons, that the necessary current expenditures for its maintenance in good order have amounted to a considerable share of the whole outlay.

At Union Park, great improvement was made. The carriage drives and walks were completed, the artificial lakes finished and filled with water, two iron bridges erected, one for carriages and one for pedestrians, various rustic bridges erected, seats supplied, trees planted and the grounds generally ornamented and improved.

At the smaller parks, there were not generally any large expenditures. An item of some interest should be noticed, however, in connection with Washington Park.

Late in the season a proposition was made by Mr. C. A. Hoyt, to lay patent concrete walks, ten feet wide, running diagonally across the park, at a price which apparently would be about the

cost of the work. His proposition was accepted. The walks are formed with a composition of tar with sand, with some ashes, resting on a bed of broken stone and gravel, making a continuous and smooth surface without joints. The work was done late in November, and in December, and was interrupted by severe weather, with snow and ice. The walks, however, now appear well — without cracks or scales, affording a smooth and elastic surface to the tread of the pedestrian, and so far as tested, in the short interval since they were laid, give promise of durability.

The Board have caused the forty-acre tract belonging to the city, and lying north of the limits, to be enclosed with a fence.

The filled portion of the lake basin lying east of Michigan Avenue has also been similarly enclosed. By dumping into the basin such suitable material as was furnished gratuitously or at a small price, there has already been formed a tract of land over four acres in extent.

The Board were made the recipients during the year of an agreeable expression of courtesy and good will from the Commissioners of Central Park, N. Y., by the donation, through O. B. Green, Esq., of two pairs of swans, taken from the Central Park. They were placed at Lincoln Park, affording much pleasure to the visitors.

General regulations for the government of all the parks of the city were prepared by the Board, and embodied by your honorable body in the public ordinances of the city.

CONCLUSION.

In closing this report, the Board remark that much of its interest will be due to the sub-reports submitted herewith, and which, besides their usual amount of detail necessarily omitted here, contain a description of the Lake tunnel and of Washington street Tunnel, and a description and history of the Water Works. We respectfully invite your attention to these reports.

A. H. BURLEY,
JOHN McARTHUR,
W. H. CARTER.
} *Board of Public Works.*

REPORT OF CITY ENGINEER.

To the Board of Public Works.

GENTLEMEN: Herewith your Engineer respectfully presents his Eighth Annual Report, or for the year ending March 31st, 1869.

As usual, the first subject in order is the

REPORT OF THE ENGINEER OF THE PUMPING WORKS.

PUMPING DEPT. WATER WORKS,
CHICAGO, Oct. 1st, 1869.

E. S. CHESBROUGH, ESQ., *City Engineer.*

SIR: I submit herewith my Fifteenth Annual Report of the operations of this department, the same being for the year ending March 31st, 1869.

The total quantity of water pumped during the past year was 5,374,624,576 gallons, being an increase of nearly 1,143,000,000 —or, say, 27 per cent. over that pumped the previous year. The daily average pumped during the past year was nearly 14¾ million gallons. The year previous, the same average amounted to about 11½ million gallons.

The following record will exhibit the aggregate operation of the works each month during the year.

OPERATIONS OF ENGINES AND BOILERS.

MONTHS.	No. of Days.	No. of Hours Run per month.	Average No. of Hours Run per day.	Total Revolutions per month.	Average No. of Revolutions per day.	Total No. of Gallons Water Pumped per month.	Average No. of Gallons Water Pumped per day.	Total Pounds of Coal consumed per month. FOR PUMPING.	Average Pounds of Coal consumed per day. FOR PUMPING.
1868.		H. M.	H. M.						
April, ...	30	719 00	23 58	411,846	13,728	376,430,083	12,547,670	949,080	31,636
May, ...	31	742 07	23 56	428,493	14,145	402,382,583	12,980,083	925,750	29,863
June, ...	30	718 40	23 57	506,216	16,874	422,909,052	14,096,968	869,670	28,989
July, ...	31	742 02	23 57	682,780	22,025	505,513,404	16,306,833	1,205,960	38,902
August, ...	31	717 45	23 09	582,661	18,793	482,160,940	15,553,578	1,159,490	37,402
September, ...	30	719 18	23 58	488,607	16,287	447,213,481	14,907,116	1,121,260	37,375
October, ...	31	744 00	24 00	452,990	14,612	456,278,707	14,718,668	1,102,910	35,578
November, ...	30	718 18	23 57	593,073	19,769	430,887,264	14,362,908	1,086,340	36,211
December, ...	31	738 00	23 48	596,542	19,243	466,284,049	15,041,421	1,168,370	37,689
1869.									
January, ...	31	742 55	23 58	454,207	14,330	457,504,543	14,758,082	1,155,480	37,274
February, ...	28	671 50	23 59	555,351	19,834	418,212,220	14,936,151	1,057,110	37,754
March, ...	31	744 00	24 00	713,085	23,002	508,848,250	16,414,460	1,295,530	41,791
Totals, ...	365	8717 50	286 37	6,465,851	212,642	5,374,624,576	176,623,938	13,096,950	430,464
General Average per month, ..	...	726 29	23 53	538,821	17,720	447,885,382	14,718,662	1,091,412	35,872
General Average per day, ...	...	23 53		17,715		14,724,999		35,608	

NOTE.—Heating the Building, &c., from October to May, is included in the above Coal.

It will be seen by the foregoing table that the pumping machinery has been in operation almost constantly. The total actual running time being $8717\frac{50}{60}$ hours, an average of $23\frac{53}{60}$ hours per day for the whole year.

During the year there has been received the following amount of Coal:

		TONS.
On hand, April 1st, 1868		$163\frac{1500}{2000}$
Rec'd of "Willow Bank"		$4,723\frac{1030}{2000}$
" " "Chippewa"		$950\frac{320}{2000}$
" " Brier Hill		$816\frac{210}{2000}$
" " Wilmington		$147\frac{640}{2000}$
" " Pittsburgh		$161\frac{1520}{2000}$
" " Lackawanna		$106\frac{1320}{2000}$
" " Erie		$49\frac{1310}{2000}$
" " Illinois		$45\frac{1240}{2000}$
	TONS.	
Of these amounts, there has been used for pumping, keeping steam, heating buildings, etc.	$6,584\frac{1152}{2000}$	
For work shop, pipe-laying, new inlet and other uses	$438\frac{680}{2000}$	
On hand, April 1st, 1869	142	
	$7,164\frac{1832}{2000}$	$7,164\frac{1832}{2000}$

The expenses due to pumping during the past year are as follows:

Salaries of Engineers, Firemen, and others	$13,064 12
$6548\frac{952}{2000}$ tons coal, at an average of $7.60 per ton,	49,768 56
540 gallons of oil	812 28
735 pounds of tallow	98 23
1306 " cotton waste	171 40
Packing	178 92
Small stores	399 88
Gas for lighting works	324 07
Repairs to engines and boilers	2,107 99
Total	$66,925 45
Cost of delivering water, per million gallons	$12 45

The following table will show the quantities of water pumped each month for the past eleven years.

TABLE SHOWING THE QUANTITY OF WATER PUMPED EACH MONTH, FROM JANY. 1, 1858, TO APRIL 1, 1869.

MONTHS.	1858.	1859.	1860.	1861.	1862.	1863.
January	81,538,179	106,905,665	132,284,454	137,651,918	151,971,047	169,900,255
February	69,426,515	106,401,412	130,800,720	142,071,067	168,931,783	158,108,450
March	82,677,463	102,415,983	150,331,680	135,576,447	192,937,942	159,930,404
April	82,600,782	89,994,235	132,930,546	128,871,178	170,081,570	
May	82,279,920	116,007,263	141,171,078	150,489,168	181,483,032	Hereafter the year commences on the first day of April.
June	90,211,505	113,098,416	148,197,024	155,996,852	199,113,518	
July	101,670,736	133,800,336	166,394,640	147,182,793	209,215,872	
August	107,176,652	123,266,556	152,427,690	168,602,494	195,588,295	
September	108,534,540	131,735,847	132,272,202	152,710,186	186,902,888	
October	101,046,605	141,527,040	148,710,195	149,362,166	199,045,045	
November	86,385,840	127,342,018	150,493,248	153,879,648	187,002,720	
December	98,316,722	122,653,139	130,773,075	145,261,272	175,006,027	
Total	1,091,865,459	1,415,147,910	1,716,786,552	1,767,154,689	2,217,279,739	487,939,109

MONTHS.	1863-4.	1864 5.	1865-6.	1866-7.	1867-8.	1868-9.
April	173,519,952	178,013,170	189,131,463	260,207,901	281,904,710	376,430,083
May	193,119,348	201,471,216	212,575,920	278,006,304	282,813,313	402,382,583
June	194,255,701	230,814,576	249,935,040	271,415,472	318,358,925	422,909,052
July	209,332,677	223,227,723	254,045,040	310,687,104	363,322,276	505,513,404
August	217,561,920	257,109,360	255,641,034	299,800,032	375,441,736	482,160,940
September	217,229,652	237,137,038	266,145,900	262,016,784	354,965,654	447,213,481
October	185,678,001	191,542,516	246,406,639	264,920,802	377,585,978	456,278,707
November	176,132,600	165,033,042	200,101,293	224,726.521	350,800.232	430,887,264
December	199,592,696	208,044,966	192,616,708	211,366,883	378,710,850	466,284,049
January	209,884,992	232,131,600	236,844,455	259,410,174	380,912,240	457,504,543
February	176,088,647	189,244,751	227,597,773	257,166,480	380,867,239	418,212,220
March	183,712,268	209,569,260	246,776,084	269,036,652	386,108,511	508,848,250
Total	2,336,109,454	2,446,339,219	2,777,217,949	3,168,760,809	4,381,791,659	5,374,624,576

TABLE SHOWING THE TOTAL QUANTITY OF WATER PUMPED, TOGETHER WITH ANNUAL AND DAILY INCREASE.

ALSO *THE GREATEST DAILY AVERAGE FOR A SINGLE MONTH FOR THE FOLLOWING YEARS:*

YEARS.	Total Quantity Pumped. GALLONS.	Annual Increase. GALLONS.	Average Daily Quantity Pumped. GALLONS.	Average Daily Increase. GALLONS.	Greatest Daily Average. MONTH.	Greatest Daily Average. GALLONS.
1858	1,091,865,459		2,991,413		September	3,617,818
1859	1,415,147,910	323,282,453	3,877,119	885,706	October	4,565,388
1860	1,716,786,552	301,338,642	4,703,525	826,406	July	5,367,569
1861	1,767,154,689	50,368,137	4,841,520	137,995	August	5,438,790
1862	2,217,279,739	450,125,050	6,074,739	1,233,219	July	6,748,899
1863	2,336,108,454	118,128,715	6,400,298	325,559	January	6,770,483
1864	2,523,339,218	187,230,764	6,913,259	512,961	August	8,293,850
1865	2,777,817,349	254,478,131	7,610,459	697,200	September	8,871,530
1866	3,168,760,609	390,943,260	8,681,536	1,071,077	July	10,022,164
1867	4,231,791,659	1,063,031,050	11,562,273	2,880,737	March	12,455,113
1868	5,374,624,576	1,142,832,917	14,724,999	3,162,726	March	16,414,460
Average for 11 years	2,601,879,656	418,175,912	7,125,557	1,173,359		8,051,460

In former reports the operations of each engine were detailed in separate tables, but as two or more engines are now required to run together, the full details are aggregated in one table; such portions of the operations of each engine as can be separated are given in the following table.

Hitherto the engines have been known as "Old," "Large," and "New" Engines. The first was erected in 1853, the second in 1857, and the last in 1867. They will hereafter be designated as "'53," "'57" and "'67," respectively.

OPERATIONS OF ENGINES.

ENGINES.	Hours and Minutes.	Total Revolutions.	Total Gallons Water Pumped.
	H. M.		
'53,.....	2,223 13	1,275,361	661,657,287
'57,.....	4,489 15	2,693,745	2,198,095,920
'67,.....	4,197 10	2,496,745	2,514,871,369
Totals,...	10,909 38	6,465,851	5,374,624,576

SHOPS.

During the year just closed, 231 new fire hydrants have been manufactured, in addition to a number of old ones repaired.

One hundred and seven new stop-valves have been made, viz:

47 four inch,	19 eight inch,
35 six "	6 sixteen "

In addition to the foregoing work, a number of drinking hydrants have been made, besides the usual work, and repairing for Street department, bridges, Washington street tunnel, and other departments.

In the Carpenter shop all the boxes necessary for hydrants and stop valves are constructed, and such other woodwork done as may be required.

There is but little available room in the vicinity of the carpenter shop for stowing lumber. A portion of the old inlet basin would afford ample room, if properly arranged. I would there-

re recommend that a few piles be driven parallel with east line f "old Inlet," and the space filled in, for the purpose of a lumer yard.

New tools and permanent fixtures have been added to the shop uring the past year, costing $2,500.00, making the total value f tools, patterns, etc., $4,300.00. Estimating the value of the ork turned out of the shop at considerably less than current rices, and allowing 8 per cent. for interest on cost of tools, tc., 4 per cent. for depreciation of same, and $500 for superinendence, the nominal net earnings of the shop for the year mount to $2,330.97.

There are remaining on hand, of

New Fire Hydrants	29
Four inch Stop Valves	12
Six " " "	11
Eight " " "	6
Sixteen " " "	5

The value of these, together with the raw material on hand at the beginning of the year, amounts to $5,270.24.

The machinery is in fair running order. The repairs done the past year were principally upon the old boilers.

Through the demolition of the south boiler-room and smoke chimney in May last, we were deprived of the use of the two boilers there located. During the balance of the year the largest of the two north boilers was necessarily in use almost constantly, the old boiler being too small to supply steam when using two engines. The latter, however, was used occasionally on a Sunday with one engine only while cleaning the former.

After removing the old south chimney, boiler-house and boilers, preparations were made to construct the new south well-curb, alluded to in the last annual report. The building of this curb, and sinking to place, occupied the time from 6th of July until the 16th of Oct. following. The completion of the walls of the south wing of the new building, as well as those of the south boilerhouse, were delayed until after the sinking of the well-curb, owing to the danger they would be liable to otherwise. However, these walls were completed the past winter and spring. The south

boilers have been repaired and re-set, and a new copper steam-pipe, connecting the engines, attached; the whole having been put in service, and are now in good order.

It will be seen by the tables that engines '57 and '67 have pumped most of the water; '53 has been used during the day in connection with '57, and stopped at night. It will be necessary, however, the coming year, to use two engines both day and night, in which case the full duplication of pumping machinery, which is so essential to a constant and reliable supply of water in our city, will cease to exist. This should not be so, for if we take the average annual increase during the past ten years, the demand during the coming year will equal not less than twenty million gallons daily; but should the increase of the past two years be taken as a guide, the average daily consumption will reach about 22,000,000 gallons, and at times may reach 25,000,000.

Eleven years ago, the city required less than 3,000,000 gallons of water daily. The machinery at that time was in duplicate and comparatively new; each engine was capable of pumping nearly three times the quantity required. The demands upon the engines at that time rendered accident far less liable than at the present. A failure in the supply eleven years ago would have been trifling compared with what it would be to-day. If the figures given be taken as a basis, the difference would be as 3 is to 20; or, may we not say, by way of comparison, as an inconvenience is to a calamity. That a failure to supply the city with water, with the present facilities, may never happen, may be true; it is equally true that when machinery is taxed to its utmost, it is liable to accident, and if of a serious character, a state of affairs as here hinted at would ensue.

In the construction of the new building, provision was made for the erection of an additional engine. The pump well is prepared to receive the foundation, and the engine should be secured as soon as may be practicable.

It has been stated in former reports that illustrations were in preparation to show the character and extent of the work done during the past three years. A portion of these illustrations will accompany this report.



SKETCH OF OLD WORKS.

ıave been in charge of this department of the Works
y were first started, a period of over sixteen years, and
o more fully contrast the past with the present condition
orks, it may be interesting, before entering upon a de-
of the present extension, to note here, briefly, some
ore important events which have occurred during that
which have more or less affected the operations of this
ıe Works.

resent pumping works—an exterior view of which will
on the opposite page—were commenced in the summer
The pump-well was finished, a portion of the 30-inch
was laid towards the lake, and the foundation of the
and tower put in, which closed the work for the season.
the spring and summer of 1853, the buildings and
re finished, and several attempts made to put in place
ch wooden inlet pipe, which was designed to extend 600
the lake, and terminate in a crib of timber. The efforts
complete this work were unsuccessful. The boisterous
of the lake rendered it difficult to secure the crib in
ıe work was therefore finally abandoned, and the water
in the pipe close to the shore.
the fall of the same year, the "stand-pipe" was put
ıe condensing and non-condensing engines were erected.
ıer was started on the 16th of December, 1853, and the
f water for the city commenced in February of 1854.
riginal pump-well is rectangular, 20×30 feet, and 25
from floor of engine house to bottom. The walls are
6 to 7 feet thick. Upon these walls the engines are

ildings were of brick, consisting of the engine-room,
et in the clear, and two wings for boiler rooms, each
feet in the clear.
ater-tower was square, composed of brick, 14 feet at base,
top, and 136 feet high. The interior was divided by a
e part was designed for a smoke chimney, the other for
stand-pipe.

The foundation rested upon a bed of sand some six feet below the surface, and at one time the tower leaned from a vertical line 14 inches; it was, however, subsequently, by an ingenious method, made plumb, and remained so until recently taken down. The original pumping machinery consisted of a vertical beam-engine, located on the north side of the building, having a steam cylinder of 44 inches diameter and a stroke of 9 feet, with two single-acting pumps of 34 inches diameter and 5½ feet stroke. This engine has been in use 16 years, and is now running daily. It was built at the Morgan Iron Works of New York, as were also the subsequent engines — one erected in 1857, the other during the year 1867. The non-condensing engine, erected in 1853, was horizontal. It was located on the south side of main building, having a steam cylinder of 18 inches diameter and 6 feet stroke, with one double-acting pump of the same dimensions. This engine was built by H. P. Moses, Esq., of this city. It was removed in the latter part of 1856, and its place occupied by a much larger one, which will be referred to hereafter.

As before stated, the supply of water commenced in February, 1854. During the first four months water was supplied but nine hours per day, and none on Sunday, except in cases of fire. After that, the supply was continued regularly throughout the twenty-four hours.

At this time there were but few water takers, and having no reservoir, the water was allowed to run to waste through numerous fire hydrants, in order to keep the small engine running. (*It is not so now.*) In the early part of 1854, the 12-inch river-pipe at State street was broken by an anchor dragging from a vessel. This accident required the supply for the West Division to be forced through an 8 inch pipe across the river at Kinzie street; and thence via 12-inch pipe across the river at Adams street, for the supply of the South Division. The damaged pipe was taken up for repair. A tunnel in the river was suggested for protection of the pipe; and, as a temporary resort, a large rubber pipe was manufactured in Boston for use until a new iron pipe could be secured; but upon its arrival here, its strength was found totally inadequate for the purpose. It was therefore abandoned. A new wrought-iron pipe, 30 inches in diameter, was subsequently put down at State street crossing, and is still in use.

During the first year the works were in operation, much trouble was experienced from sand being driven through the inlet pipe into the pump well. The mouth of the pipe being located but a few inches under water, near the shore, was exposed to the heavy waves of the lake. The water was frequently cut off from the pump well from this cause, and at times the supply would be affected by an accumulation of drift-wood, leaves, etc., around the mouth of the pipe. On one occasion the water was entirely stopped by a vast number of insects accumulating on the strainer. To protect the inlet pipe from these annoyances, in 1855 the present breakwater was constructed, forming a large basin. This being dredged to a considerable depth, it fully answered the purpose it was intended for, and was in use until the Lake Tunnel was completed.

During the latter part of the year 1854, the reservoir in the South Division was completed and tested. Water was admitted to the tank gradually, but when filled the building yielded under the weight, cracking the walls to such an extent that considerable time was required to repair them; during which the engines were run day and night.

During the year 1855 a portion of the original 30-inch inlet pipe, leading from the lake to the pump well, was found defective, and a new one, 3×4 feet square, made of oak plank, was put in at a greater depth. Considerable difficulty was experienced in doing the work, involving the removal of the east wall of the engine-house, etc.; but when completed it proved far superior to the old one, which was afterward abandoned. Upon completion of the Lake Tunnel, this aqueduct was also abandoned, and now serves as a waste pipe for the water delivered from the air-pumps of the several engines.

During the early part of 1856, the quantity of water used in the city was nearly equal to the maximum capacity of the high-pressure engine; it was found necessary, therefore, to replace it by a much larger engine. Accordingly, a contract was made with the Morgan Iron Works of New York for the construction of the present south engine, which was set up and put in operation in July of 1857. This engine is similar in construction to the con-

densing engine previously referred to; it has a steam cylinder of 60 inch diameter, with a stroke of 10 feet; there are two single acting pumps, each 40 inches diameter and 6¼ feet stroke.

Considerable difficulty was experienced in preparing a foundation for this engine, as it was to occupy the site of the high pressure engine and a portion of the only pump well then built, and from which the supply for the city must be pumped. However, the high-pressure engine was removed to a temporary site and so arranged that it might be used for supplying until the completion of the new one.

The work of setting the stone was carried on during the night only. While constructing this foundation no water could be admitted to the well. This work occupied a number of nights, during which, as before stated, the supply to the city was cut off. However, the daily supply was uninterrupted, and the reservoir in the South Division was kept full at night, which, in the event of a fire in the city, was immediately admitted into the mains for the use of the Fire Department.

In the summer of 1857, a 24 inch main was laid from the Pumping Works to the West Division, crossing the river at Chicago avenue, with a wrought iron pipe. Soon after it was completed, the river portion was rendered useless for a time by a pile 12 inches diameter having been accidentally driven through it, permitting the water to flow in the river. From this accident, the engine narrowly escaped serious injury by the sudden and unexpected reduction of load. The damaged pipe was taken up, repaired, and placed in its original position, where it yet remains in use.

In 1858, two new reservoirs of half a million capacity each were erected in the North and West Divisions, respectively. The use of these reservoirs had a favorable effect upon the operations of the pumping works as well as upon the uniformity of the supply. The average daily quantity of water used in the city during this year was less than 3,000,000 gallons.

From this period up to 1863, the operations of the works were of an uniform and satisfactory character, nothing worthy of note occurring, except the construction of two brick chimneys to take the place of the iron smoke-pipes hitherto used for the boilers,

and the annual trouble, annoyance and danger to the mouth of the inlet pipe by vast quantities of small fish and floating ice, which frequently, during cold weather, threatened to cut off the supply of water from the pump well.

During 1863, the daily average consumption of water reached nearly 6,500,000 gallons, and at certain periods a greater quantity. In view of this rapidly increased demand upon the works, it was believed that steps should be taken at an early day to augment the pumping facilities.

NEW WORKS.

The dimensions of the old building, pump well and foundations would not admit of the erection of additional machinery. It became necessary, therefore, to provide both a new engine, foundation, and pump well; this would involve the gradual *razeeing* of the old building and erection of new and more commodious ones. This course was under consideration in 1863. Information was sought for and obtained from various sources, calculated to assist in executing the plans for the proposed extension.

Plans and specifications for a new engine, boiler, &c., were prepared early in 1864, and after receiving the approval of engineers of prominence both at home and abroad, they were submitted to the Commissioners of the Board of Public Works, then consisting of J. G. Gindele, F. Letz, O. J. Rose, Esqs., and Hon. F. C. Sherman, the Mayor, by whom the plans for the engine were adopted. Proposals were invited, and in July of the same year the contract for its construction was awarded to George W. Quintard, proprietor of the Morgan Iron Works, N. Y. City.

To provide the necesssary foundation and buildings for new machinery, two plans suggested themselves; the first was to attempt to construct a pump well, foundations, &c., and locate the engine upon the site then occupied by the North boiler room. To construct the pump well, required excavations to a depth of at least 25 feet below the surface, the greater portion being quick sand, and within 12 feet of foundations of one of the present engines. Considering the nature of the soil at this point, and the proximity of this work to the water tower, the walls of the old building and to the engines, upon all of which the city must

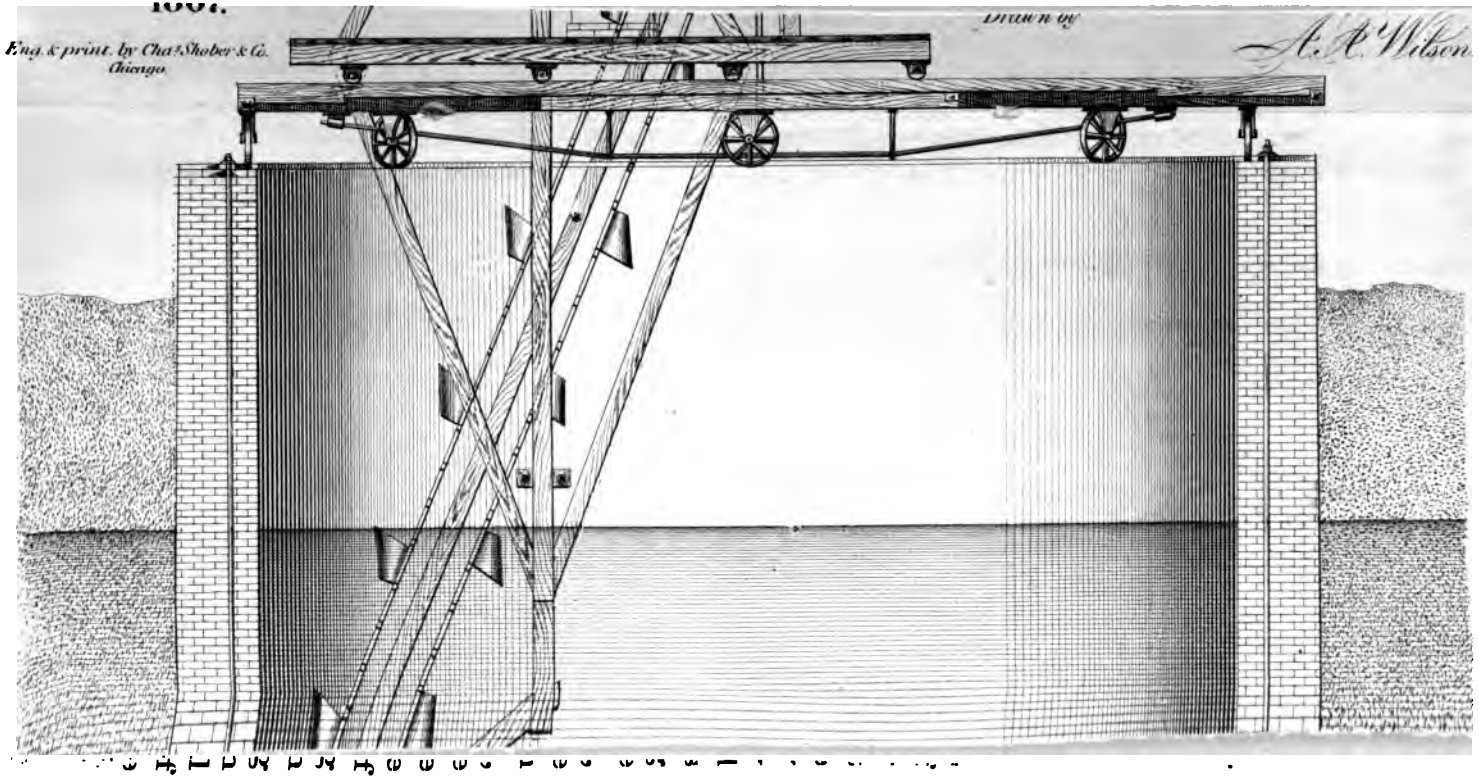
depend for supply, and in view of the importanc
means of supply amply secured against acciden
regarded as somewhat hazardous to undertake
way.

The second plan provided for the constru
foundations and the erection of new buildings e
ent of the old works, and at a sufficient distance
obviate most of the dangers alleged against the
standing this, however, there were objections t
of so important a character that it was entertain
favor. It contemplated the removal eventually
engines to the new site. This would have involve
expense and far more time than the proposed
old site, and promised less satisfactory results w
It was therefore thought best to reconsider th
adopt such measures in carrying it out that the o
present works would not be interfered with duri
accordingly, the preliminary work of removing
and brick smoke chimney, also the wall of ma
entire boiler house and a portion of the water
menced on the 19th of March, 1866. Upon the si
the following plan was adopted, viz: a pump w
built upon the surface of the ground and afterwa
depth required.



NEW PUMP WELL.

The form of the curb and the mode of sinkin
on the page opposite, which shows a sectional ele
is circular in form, 31½ feet internal, 37 feet exter
21 feet deep, the wall 2¾ feet thick at bottom, a
giving a batter on the outside surface. The
selected hard burnt brick, laid in Louisville ce
composed of one part of the former to two pa
The surface inside and out is plastered with
same composition. The wall is bonded with
parallel to its circumference, every 3 feet in hei
the wall rests upon a cast iron shoe weighing
segments firmly secured at each joint with bol


1867.
Eng. & print. by Chas. Shober & Co.
Chicago.
Drawn by
A. A. Wilson

shoe is 2¾ feet wide at top, the exterior is uniform with surface of wall, the interior tapering through a curve to a sharp edge at bottom, a distance of 2½ feet. There are 32 1¼ inch bolts placed in zigzag position 3½ feet apart throughout the circumference, extending from the under side of the shoe through the body of the wall and terminating on top of 5 inch oak coping. These vertical bonds are secured at either end by nuts, washers, &c.

The structure is located at a point which brings a portion of it within 12 feet of the foundation of one of the present engines; the bottom of it is 20 feet below the present surface of the lake, and 9 feet below the bottom of old well; its weight while sinking was over 500 tons. The curb was completed and ready for sinking on the 23d of June, 1866. As before remarked, the ground through which the curb had to pass during the process of sinking, is of a very troublesome character, most of it being quick-sand. It was therefore apprehended that some trouble might ensue from the caving of the sand and water surrounding the outside of the curb, due to the preponderance of head created by the removal of sand and water from inside, and thereby greatly increase the danger to the adjacent building. With this view, and in order to diminish as much as possible any danger from this source, it was determined to excavate the interior without removing the water until the clay formation was reached; for this purpose a dredging machine was designed, especially adapted to the work, and although a rudely built affair it answered the purpose admirably. The machine is shown in the elevation illustrated on preceding page; it consists of a main platform with wheels attached, resting upon the top of curb and arranged to traverse its entire circumference. Upon the main platform a supplemental carriage is placed, having wheels to traverse the diameter of curb; to the latter is connected the machinery for excavating, consisting of two endless chains, to which are attached 14 iron buckets having a capacity of about ¾ cubic foot each. Square timbers placed at an angle extend from bottom to top of curb. The chains carrying the buckets pass over a *square* casting attached to top and bottom of these timbers. The motive power was derived from a small steam engine, transmitted through gearing to the chain of buckets. The whole was so arranged that the buckets could be

directed to any desired part within the curb, or at a depth of 6 feet below its bottom, without stopping or interfering with the operation of the machine. By this means the excavation was made uniform throughout the interior and under water to a depth of 13 feet; hence it was found comparatively easy to keep the structure level. The work of sinking commenced on the 2d of July. The sand was dry for about 4 feet. The first day the curb was sunk 13½ inches. On July 6th water was reached; on the 7th an obstruction consisting of a bulk-head of heavy sheet piling was met; it was found to extend across and beyond one-third the diameter of the curb. These piles were the remains of those used in the construction of the old pump-well in 1852; being near the surface they were removed without much trouble except those upon which the iron shoe of the curb rested.

From this point until the clay was nearly reached, the work of sinking progressed satisfactorily, although at times it was quite slow, varying from 13½ inches at the start to as little as 3 inches per day.

The clay is 15 feet below the surface in this locality. Just before reaching it there is a thin stratum of hardpan, which is exceedingly hard to excavate. Just at this point an obstacle was met with which caused some delay and considerable trouble to remove; it proved to be a log of wood, nine feet long and one foot in diameter; it was found directly under the curb, lying in an oblique direction, completely obstructing its further descent. The dredge was brought to bear upon it, and excavation was made far below it. This caused a slight caving of sand from the outside. The water inside being 13 feet deep, a portion was pumped out and the obstruction finally removed. The excavation was resumed, and after removing the stratum of hardpan the fine blue clay was reached, the iron shoe sinking in it, making a partial joint, thereby excluding the flow of water from outside. All the water was then pumped out, and the labor of sinking the curb from this point to the required depth was attended with comparatively little danger or difficulty.

At times the rate at which the curb sunk was discouraging; however, when the clay was reached, the rate of progress was greatly increased, and it may be interesting to again mention

that while passing through the sand the curb moved as little as 3 inches in 10 hours; yet, after entering the *clay* several feet, it sunk 3½ feet in 10 hours, and at one time the structure moved 28 inches without stopping, notwithstanding the increased friction of earth on the outer surface due to its increased depth, and without extra weight, save that due to the absence of water from the inside.

The obstacles met with, such as timber, etc., together with the unusual number of rain-storms, and the extreme heat of the season, to which the workmen were exposed, delayed the work much longer than was anticipated. The sinking was completed on the 28th of March without damage to the surrounding work or to the curb. In the latter, not the slightest crack could be found in the masonry, which may be attributed in a great measure to the thorough and substantial manner in which the builder, R. E. Moss, Esq., did the work.

The bottom of the curb is constructed of two courses of 3 inch oak plank laid upon the clay; 10 inch pine timbers are laid on these planks, 15 inches apart; the spaces are filled with concrete. One course of 3 inch oak plank covers these timbers. Concrete, 9 inches thick, follows, and upon this commences the engine foundation.

Between the piers the bottom is paved with two courses of brick. The brick aqueduct, 4½ feet diameter, connected with the Lake Tunnel *via* the gate chamber, enters the well curb on the east side between the main foundation piers.

THE ENGINE FOUNDATIONS

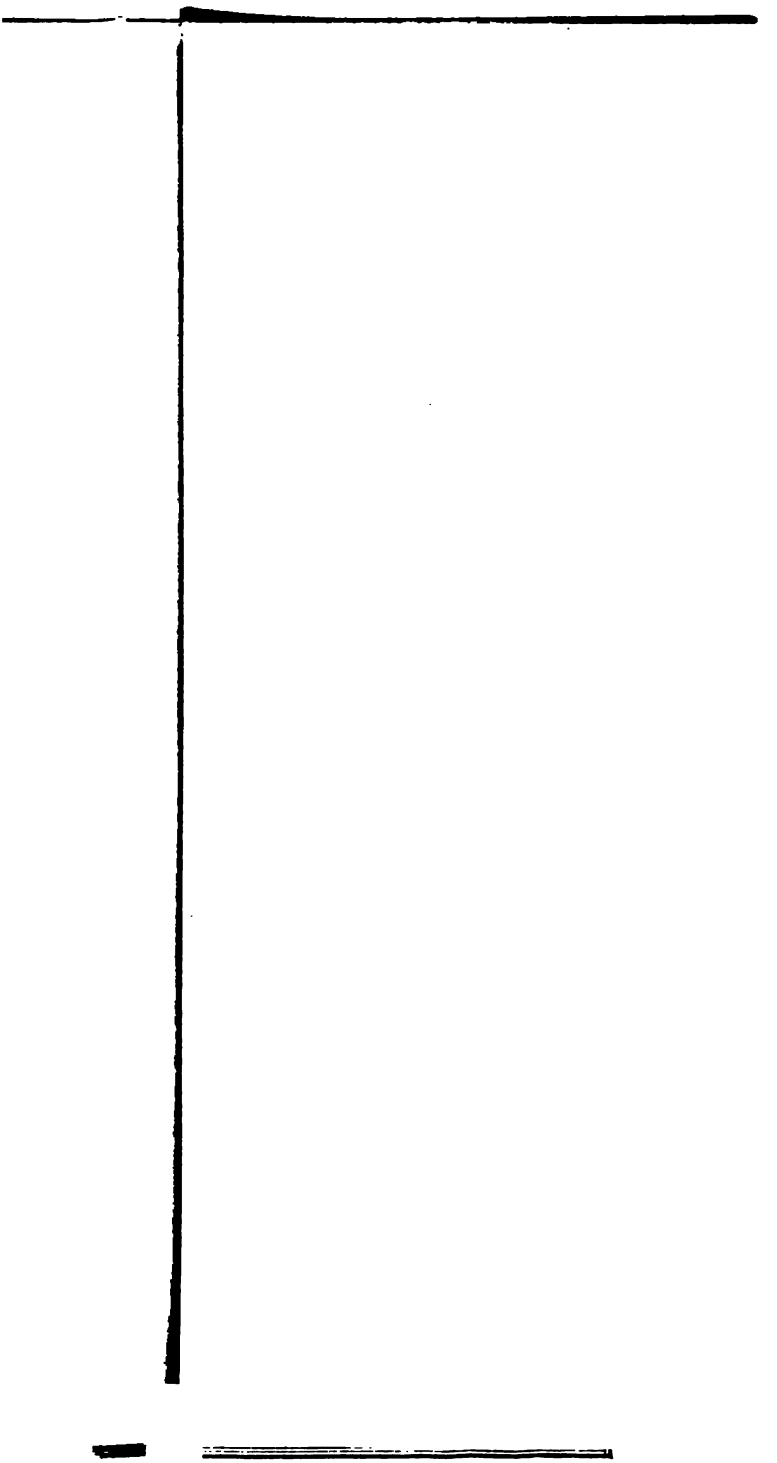
Are composed of stone, furnished by Messrs. Singer & Talcott of this city. These gentlemen quarried and worked the stone with much care, in accordance with drawings furnished, which greatly facilitated the labor of setting them. The stones, which were dressed on the ground, are the full width of the piers, viz: 5½ feet, and range from 13 to 22 inches thick, of excellent quality. Mr. A. A. Wilson made all the drawings from which the foundations were finally prepared. The foundations are each 25 feet

long, 5½ feet wide, and 21½ feet from bottom to the point where the bed-plates are located; from thence piers 4½×5½ feet, and 3×5½ feet, respectively, are built, upon which rests the upper foundation plate. The first stone of the foundation was set October 6th, 1866, and the foundations were completed on the 29th of November following.

The work of erecting the engines was immediately commenced, and continued until they were completed. However, owing to the delay in completing the building, the engines were not put in operation until the 20th of July, 1867, and with some slight alteration, referred to in former reports, they have continued to perform in a satisfactory manner. The work upon the engines, both as regards strength and finish, are of the most satisfactory character; the various parts coming together without trouble or mistake, notwithstanding the unusual formation of many of the large pieces. The fly-wheel, in particular, is a masterpiece of mechanism. It is 24 feet in diameter and weighs 25 tons. It is composed of 8 *double* segments in the run; 8 tuscan columns form the arms; the hub is composed of one piece; the unsightly bolts and nuts, usual in a wheel of the kind, are not to be seen. The whole surface of the rim, arms and hub having been *turned* smooth and bright.

Much credit is due Mr. Geo. W. Quintard, the contractor, for a liberal construction of the specifications, as well as to his General Superintendent, Edward Faron, Esq., for the lively interest manifested by him in all the details of the work; also, to Mr. Albert Becher, chief draughtsman, for the accuracy of the working drawings, and to Mr. William P. Cox for the skill exhibited by him in the fitting and erection of the engines.

A general description of these engines was given in the Third Annual Report of the Board. It is deemed unnecessary, therefore, to repeat it here, further than to say they are constructed substantially the same as described in the report referred to, as will be seen by reference to the illustration on the next page.





THE WORK OF ERECTING THE NEW BUILDING

On the old site, and which forms so important a feature in the extensive improvement, has been quite tedious, owing to the care necessary to guard against accident to the operation of the works. Portions only of the old wall could be removed and rebuilt at a time. However, the buildings are now so nearly completed that a description of them may be given.

The plan and dimensions of the new buildings provide ample room for the present machinery as well as for additional engines.

The style of architecture is *Castellated Gothic* with heavy battlemented corners, executed with solid rock-faced ashlar stone and cut stone trimmings; all the detail being of a massive and permanent character.

The dimensions of the engine room are 142 feet long, 60 feet wide, and 36 feet in the clear from main floor to ceiling. A projection of 24×56 feet forms the center of the main front. This portion is divided into two stories. The upper part is devoted to drawing rooms and sleeping apartments for the engineers. The lower part is divided by the main entrance, the floor of which is tiled. On the south side of the vestibule is a large room designed for Commissioners' or reception room. On the north side are offices and other conveniences for engineers. All the walls are 2 feet thick. The walls of the interior of the main building are rough cast, blocked off representing cut-stone work. The ceiling is divided into square panels, formed by projecting moulded purlins, supported by large gothic brackets resting on heavy corbels built in the wall. The roof of the main building is constructed of massive timbers, covered with slate and pierced with the necessary ventilators, &c. Midway between floor and ceiling and extending around the entire interior space of the building, there is a handsome and substantial gallery or balcony, protected by fancy gothic iron railing, the whole resting upon brackets of like style built into the walls. From this point a pleasing view of the operations of the engines is obtained. This gallery is reached by two flights of spiral stairways constructed entirely of iron. Below the main floor of principal building

there is a space extending over the whole area and 9 feet high in the clear. Here are located the pumps, delivery mains, stop-valves, &c., of the several engines, also store rooms and other conveniences. From the floor of this large room the pump-wells connected with the Lake Tunnel descend. The north well and the center or old well have already been described. The south well, intended for additional engines as before stated, was sunk to place in October last. The form and construction of this curb, as well as the mode of sinking it to its place, is similar to that adopted for the north well already described; it is, however, larger. The outside diameter is 44⅛ feet at the bottom, 43⅛ feet at the top, and 22 feet from the top of the cast iron shoe to the top of the coping. The outside has a batter of 6 inches. The vertical bond consisted of 48 1½ inch bolts.

The Boiler rooms are placed 19 feet apart, and are located in the rear of the main building. They are 46½ feet long, 36 feet wide, and 25 feet from the floor to the ceiling. The floor is of stone and the roof is wholly of iron and slate, thus rendering them fireproof. The buildings throughout are heated by steam, and are amply lighted, ventilated and drained.

A single smoke-stack is placed between the two boiler rooms; the north and south side of the base forms a part of the wall of the boiler room, and are so arranged that the boilers in both rooms are connected with it 20 feet above the floor. The lower part is constructed with a large opening east and west, forming a vestibule or main passage from the rear part of the main building. The base of the smoke stack is 18 feet square to a point 30 feet high; from thence it is octagon with a gradual taper, terminating in a castellated cornice 130 feet from the ground. The exterior is stone, corresponding in style to the buildings. The interior has a parallel circular flue built of brick, which is built independent of the stone work, thus forming an air space between the two. The whole structure rests upon piles driven into the clay. An illustrated elevation of the buildings and smoke-stack will be found on the opposite page.

(For this illustration, see Frontispiece.)

THE GROUNDS

Are bounded by Chicago Avenue, Pine Street, Pearson S and the Lake. They have a frontage on Pine Street of 218 and extend from the lake west a distance of over 571 feet. T grounds are not yet fenced or laid out, but the illustration o following page shows the proposed improvement, which keeping with the general character of the buildings, &c.

The foregoing gives but an imperfect idea of the vast an of work which has been done upon these premises durin past four years. The perplexities, anxiety and risk arising ing the prosecution of the work cannot well be convey words, but as all that was proposed has been successfully a plished, the spectator will observe *wisdom*, *strength* and *b* everywhere prominent in the designs and execution of the which is composed of almost imperishable material, and ma for ages and become a land-mark, visible to the mariner approaches the port of Chicago, as well as a prominent obje miles inland. The whole work cannot fail to reflect the hi credit equally upon the Board of Public Works, Messrs. Gi Letz and Rose, who adopted the plans and commenced the and upon the subsequent Board, Messrs. Burley, McArthu Carter, who have carried them to completion. To the citiz Chicago the water works of our city will stand as one o enduring monuments which so fully characterize their *en enterprise* and *liberality*.

Much credit is also due to W. W. Boyington, Esq., the tect of the buildings, for the professional skill, taste and judg displayed in the work entrusted to him. That the plans been faithfully executed by the various contractors, is demonst by the character of the work. The following named gentl have been engaged upon the recent extension and improvem

Machinery, Geo. W. Quintard, New York.
Pump-well, R. E. Moss, Chicago.
Masonry of Buildings and Tower, A. Wallbaum, Chicag
Carpentry, " " J. Clark & Bro., "
Iron Work " " F. Letz & Son, "

LAKE MICHIGAN
COAL HOUSE.
GATE CHAMBER.
OLD INLET BASIN CONSTRUCTED IN 1855.
COAL HOUSE.

Painting, Graining, &c., Heath & Milligan, Chicago.
Heating Apparatus, Walworth, Twohig & Furse, "
Gas Fitting, Nash & Blow, "

In conclusion, permit me to say, that during the progress of the work for the past four years, those employed in this department have necessarily been subjected to many annoyances and exposures incident to enlargement, rebuilding, &c., among whom may be mentioned Mr. Trautman, who has served as Assistant Engineer for thirteen years. Mr. Faron and Mr. Lewis also have filled like positions for a number of years. There are firemen and others whose term of service covers nearly the whole time since the works were first started, and by faithfulness they have contributed their share to bring *order out of chaos.*

Respectfully,

DEWITT C. CREGIER,
Engineer.

The extraordinary rate of increase in the supply of water, as reported by Mr. Cregier, has been beyond all expectation, and gives rise to most serious inquiries as to how this growing demand is to be met, which will form the subject of a special report to the Board.

INLET BASIN.

This is in about the same condition it was a year ago, but the piles are more decayed. Of several projects for improving or preserving the inlet afforded by the basin, so that it could be used in case of accident or temporary stoppage to the Lake Tunnel, the best seems to be to fill up a portion, at least, of it, and ultimately all except a channel sufficiently wide to supply the city in case of need. This can easily be done the present season. When done, it will afford more room for the storage of lumber and other articles, the necessity for more space on this account being a growing one.

DISTRIBUTING PIPES.

There were laid during the year ending March 31st, 1869, the following main and distributing pipes, viz:

SOUTH DIVISION.

On what Street.	Between what Streets.	Length in Feet.	Diametr in Inches.
Archer avenue.	Reuben and Market square	590	6
Alexander st...	Buddan and Stewart av	630	4
Burnside st....	Twenty-seventh and Thirty-third	3690	4
Bushnell st.....	Wentworth av. and westward	2100	4
Butterfield st...	Archer av. and Nineteenth	440	4
" "	Twenty-seventh and Thirty-third	2550	4
Butler st.....	At intersection of Twenty-fourth st	50	4
Calumet av....	Twenty-second and Thirty-third	680	6
" "	Twenty-fourth and Twenty-fifth	685	6
Ellis av.....	Wahpanseh and Egan avs	1570	4
Egan av.....	Ellis and Lake avs	500	6
Franklin st.....	Adams and Harrison sts	1800	6
Farrell st.....	Archer av. and Hickory st	930	4
" ".....	Lyman and South	790	4
Halsted st.....	Archer av. and Twenty-sixth	740	6
Hickory st.....	Main and Deering sts	1200	4
Indiana av.....	Thirty-third and Thirtieth sts	1352	6
Kankakee av ..	Twenty-second and South	50	6
Lime st.....	Archer av. and Wayer st	412	4
Lake av.....	Oakwood and Wahpanseh	1516	4
Langley st.....	Wahpanseh av and South	870	4
Lyman st.....	Main and Farrel	395	6
Main st...	Archer av. and Thirty-first st	2000	6
McGregor st....	Wallace and Sanger	790	4
Myrick av.....	Twenty-ninth and Thirty-second	1340	4
Prairie av.....	Twenty-ninth and Thirty-first	1363	8
Purple st.....	Nineteenth and Twentieth	440	6
Rhodes av.....	University pl. and Northward	356	6
State st.... ...	Twenty-ninth and Thirty-second	2080	8
Sanger st.....	Twenty-sixth and northward	79	6
"	McGregor and Southward	370	6
Twenty-ninth st	State st. and Prairie av	1800	8
"	State and Clark	700	6
Twenty-fourth .	At intersection of Wabash av	100	4
"	Hanover and Butler	480	4
"	Hanover and Stewart av	560	6
Thirty-first st...	Butterfield and east of State	750	8
" ...	Wabash av. and westward	114	8

SOUTH DIVISION.—CONTINUED.

On what Street.	Between what Streets.	Length in Feet.	Diametr in Inches.
Thirty-second st	State st. and eastward	70	8
Twenty-second.	Calumet and Kankakee avs	470	6
Twenty-fifth st.	Calumet and Prairie avs	450	6
"	Wabash and Michigan avs	475	6
Thirty-third st .	At intersection of Burnside	147	6
Twelfth st	Clark st. and South Branch	1000	16
Tyler st	At intersection of Franklin st	190	4
Twenty-sixth st	State and Halsted	5400	8
University place	Cottage Grove and Rhodes avs	816	4
Washington st..	Franklin and Market	800	4
Wentworth av..	Nineteenth and Twentieth	440	4
" ..	Bushnel and northward	218	4
" ..	Bushnel and Twenty-sixth	1800	6
Wabash av	Twenty-sixth and Thirty-second	3500	6
Wahpanseh av.	Ellis and Langley	884	6
Wallace st	McGregor and Twenty-sixth	1067	6
	Hydrants	1261	4
	Total	55,850	

WEST DIVISION.

On what Street.	Between what Streets.	Length in Feet.	Diametr in Inches.
Aberdeen st	Harrison and Tyler	285	4
Baldwin st	Hubbard and Kinzie	400	4
Bawans st	Blackhawk and Reuben	925	4
Bunker st	Canal and Beach	475	4
Bunker st.	Halsted and Desplaines	900	4
Belknap st	Morgan westward	275	4
Bishops Court..	Madison and Washington	525	4
Burlington st...	Sixteenth and Eighteenth	890	4
Canalport av...	Halsted and John	550	6
Coolidge st	Blue Island and Centre avs	765	4
Catherine st	Stewart av. and Canal	590	4
Carpenter st	Madison and Washington	520	6
" ...	Lake and Fulton	445	6
Center av	Blue Island av. and Sixteenth	1350	6
"	Taylor and southward	174	6
"	Jackson and Van Buren	485	6
"	Evans and south of Twenty-second	1335	6
Carrol st	Reuben and Paulina	670	4
"	Extension to River for use of "Tugs"	130	4
"	Hoyne and Leavitt	765	4
"	Jefferson and Clinton	440	4
Clinton st	Harrison and South	40	6
Cornelia st	Noble and Reuben	1340	4
Desplaines st...	Twelfth and Harrison	2704	8
Dekoven st	Beach and Canal	480	4
Eighteenth st...	Arthur and Lumber	200	4
" ..	Jefferson and Union	800	6

WHAT STREET.	BETWEEN WHAT STREETS.	Length in FEET.	Diametr in INCHES.
ng st.....	From Halsted west.....	130	4
st.....	End of pipe and Centre av.....	230	4
t st.....	Wood and Paulina.....	660	4
.....	Noble and Reuben.....	1360	4
on st.....	May and Curtis.....	354	4
.....	Hoyne and Leavitt.....	730	4
ık st.....	Blue Island av. and Waller.....	1070	4
rth st.....	Halsted and Green.....	350	6
:n st.....	Lake and Kinzie.....	1236	4
.....	Van Buren and Tyler.....	450	4
.....	Third and Pratt.....	700	6
rge st.. ...	Carpenter and Grover.....	500	4
ted st.....	Harrison and Sebor.....	300	4
"	Twenty-second and Lumber.....	890	6
rison st....	Morgan and Silver.....	580	8
"	End of pipe and Center av.....	260	6
"	Clinton and Desplaines.....	740	8
ore st.....	Jackson and Van Buren.....	495	6
ne st.... ..	From Van Buren north.....	75	6
ana st.....	Lincoln and Robey.....	700	4
ı st.....	Canalport av. and Walsh.....	390	4
"	Luke and Evans.....	516	4
:son st.....	Hoyne and Seely.....	380	4
zie st.....	Wood and Lincoln.....	700	6
sas st.....	Throop and Loomis.....	740	4
ritt st.....	Hayes School and Kinzie.....	912	6
mis st.....	Adams and Jackson.....	340	6
"	Monroe and Madison.....	500	6
e st.....	Carpenter and Morgan.....	350	6
e st.....	Centre av. and May.....	550	4
e st.....	From Union st. west.....	50	4
in st.....	Monroe and Madison.....	200	6
e st.....	Taylor and Twelfth.....	880	4
k st.....	Union and Halsted.....	550	4
hell st.....	Union and Halsted.....	492	4
"	Blue Island av. and Waller.....	650	6
"	Blue Island av. and Waller.....	800	4
vaukee av..	End of pipe and Ridgeville Road.....	2250	6
st.....	English and Evans.....	1550	4
.....	Hubbard and Kinzie.....	490	4
.....	Fulton and Carrol.....	390	6
.....	Gurley and Harrison.....	500	4
.....	Chicago av. and Second.....	527	6
.....	Lake and Randolph.....	480	6
lison st.....	Western av. and Oakley.....	616	8
iroe st.....	Loomis and Reuben.....	930	4
"	End of pipe and Leavitt.....	360	4
well st.....	Canal and eastward.....	345	6
"	Blue Island av. and Waller.....	979	6
gan st.....	Twelfth and Sixteenth.....	2672	8
garet st....	Mitchell and Henry.....	416	6
gher st.....	Canal and Jefferson.....	850	4
"	Halsted and Union.....	500	4
rberry st....	Wright and southward.....	650	4
raska st....	Throop and Laflin.....	1380	4
t st.....	Sixteenth and Evans.....	700	4

WEST SIDE—CONTINUED.

On what Street.	Between what Streets.	Length in Feet.	Diametr in Inches.
Noble st	Hubbard and Kinzie	450	6
Peck st	Fulton and Depot pl	500	4
Peoria st	Harrison and Tyler	450	4
Paulina st	Hubbard and Kinzie	430	6
Reuben st	Coolidge and Sampson	400	6
"	Carrol and Carrol	180	6
Ruble st	Eighteenth and Northward	390	4
Reuben st	Jackson and Tyler	1000	6
"	M lwaukee av and Bawans	450	6
"	Indiana and Hubbard	425	6
"	Erie and South	418	6
Rumsey st	Fourth and Indiana	540	4
Seventeenth st	Union and Halsted	314	4
Sholto st	Polk and Harrison	640	4
Sangamon st	Harrison and northward	50	4
"	Hubbard and Kinzie	380	4
Second st	Milwaukee av and Carpenter	240	6
"	Mark and westward	414	4
Sampson st	Loomis and Laflin	650	4
Sixteenth st	Morgan and Nutt	400	8
"	Halsted and Newberry	184	8
"	Halsted and eastward	66	8
Twelfth st	Canal and the River	1362	16
Twenty-second	Centre av. and Canalport av	1800	6
Throop st	Twelfth and Nebraska	612	6
Taylor st	Canal and Beach	478	6
"	Throop and Laflin	1150	6
Union st	Sixteenth and Eighteenth	840	4
"	Twelfth and Sixteenth	2150	8
"	Canalport av. and Luke	490	4
Van Buren st	Canal and Clinton	414	6
"	Throop and Loomis	716	6
"	Peoria and Morgan	400	6
"	Hoyne and Seely	350	6
"	Centre av. and Loomis	850	6
Warren st	Oakley and Western av	790	4
Waller st	Twelfth and Mitchell	600	8
"	End of pipe and Mitchell	716	4
Walnut st	Wood and Lincoln	685	4
"	At intersection of Lincoln	73	8
	Hydrants	2375	4
	Total	81,675	

NORTH DIVISION.

WHAT STREET.	BETWEEN WHAT STREETS.	Length in FEET.	Diametr in INCHES.
um place ..	Sedgwick and Hurlbut	670	4
" " ..	Larrabee and Orchard	600	4
ing st.....	Willow and northward	1150	4
k st.....	Oak and Chestnut	970	6
tnut st	Clark and Dearborn	450	4
re st	Sedgwick and Franklin	660	4
on st	Willow and Clay	830	4
sion st.....	LaSalle and Wells	440	8
st.....	Clark and eastward	100	4
rton av....	Clark and Hurlbut	300	4
imund st...	Wells and Franklin	640	4
e st.....	Centre and Willow	1623	4
but st.....	Sigel and northward	912	6
'	At intersection of Lincoln av	153	4
n st.....	Rush and Cass	384	6
st	From Linden north	100	4
ted st.....	North av. and Weed	500	6
st.....	Wells and Franklin	445	4
yette place.	Clark and eastward	60	4
st st... ...	Clark and westward	65	4
lle st.....	Kinzie and Michigan	300	4
'	Division and North av	2900	8
oln av.....	Larrabee and south-east	700	6
'	" "	260	4
abee st.....	Grove and southward	400	6
en st.....	Hurlbut and Church	430	6
igan st...	Wells and Kingsbury	920	4
et st.	Ohio and Indiana	330	6
le st.....	Dearborn and State	390	4
'	Clark and Dearborn	190	4
st.....	" "	70	4
.....	Larrabee and Townsend	800	6
st.....	Market and Kingsbury	970	4
st	Hinsdale and northward	300	6
ler st.....	Wells and La Salle	420	6
ia st	Lincoln av. and westward	150	6
hington pl..	Clark and Dearborn	412	4
ow st.....	End of pipe and Dayton	120	4
ing st.....	Wells and eastward	260	4
del st.....	Wells and Franklin	454	4
e st.....	Market and Sedgwick	500	6
s st.....	From Kinzie southward on both sides	660	4
h Water st.	To connect with Wells st	100	4
	Hydrants	470	4
	Total	23,558	

he total length of pipe laid in the city during the year was
niles and 2,683 feet, 440 feet of 6 inch and 6,477 feet of 4
pipe was taken up and replaced by pipe of larger size.

The entire length of pipes of different sizes laid in this city to this date is as follows, viz:

		Feet.
28	inch cast iron main pipe	160
24	" " " " "	22,922
16	" " " " "	14,972
12	" " " " "	9,830
30	" wrought iron river pipe, State st	280
24	" " " " " Chicago av	236
24	" " " " " Rush st	530
12	" " " " " Adams st	176
12	" cast iron distributing pipe	844
10	" " " " "	7,862
9	" wrought iron " and syphon pipe, on Archer avenue	90
8	inch cast iron distributing pipe	111,261
6	" " " " "	383,275
4	" " " " "	520,353
3	" " " " "	28,566
		1,101,357

Or 208 miles and 3,117 feet.

The necessity for more large pipe continues to increase.

An attempt was made to construct a tunnel under the river at Twelfth street for the passage of this pipe; but owing to the meeting with unexpected difficulties and the threatening of serious injury to the masonry of the new bridge there, it was thought best to abandon the work done for the tunnel, consisting of the shaft on the east side of the river and about twenty feet of drift westward. Two boiler iron syphons, two feet in diameter, one for each side of the draw, were then made. It is hoped that this connection across the river will be made early in the season.

The plan determined upon by the Board last year of forming a complete circuit of large pipe around the most important part of the city, it is hoped, will be partially carried out the present year by the extension of the 24 inch main on Wabash avenue, southward to thirty-first street, by the laying of a mile of same size on Reuben street, between Madison street and Chicago avenue, and if possible by a connection between the latter point and the

Pumping Works, with a 24 inch pipe crossing the north branch on Division street. It was intended to lay a 24 inch pipe on Reuben street as far south as Harrison street, and then connect with the 12 inch pipe to be laid to that point, but the necessity of making the West Side supply more secure against accidents being so great, it has been decided to omit for the present the laying of this portion, and to use the pipe in the connection northward with the Pumping Works. The 16 inch pipe on Chicago avenue has been already extended to Reuben street. The 16 inch pipe on Twelfth street has been extended part of the way to Reuben street. As soon as the whole of this circuit and the cross connections can be made, the city will be in a far safer and more satisfactory condition with regard to the water supply than at present.

QUALITY OF THE WATER.

This has been, with rare exceptions, excellent. Occasionally, owing to the prevalence of strong easterly winds, there has been a slight milkiness in the color of the water. During the heated term of last summer the temperature of the surface of the Lake rose unusually high, and was then driven westward by a strong wind. This caused a very sudden change in the temperature of the bottom of the Lake at the crib. Many intelligent citizens supposed the Board had commenced supplying the city from the Lake shore again, in order to repair or do something to the Tunnel; but there has been no supply of water to the city except through the Tunnel since this was completed.

HYDRANTS.

During the year ending April 1st, 1869, the following new hydrants were put in, viz:

SOUTH DIVISION.

1 S. W. corner of Archer avenue and Market Square.
1 S. W. " " " Main street.
1 S. W. " " " Mary street.
1 N. W. " Burnside and Thirty-third streets.
1 S. W. " " Thirty-second streets.
1 N. W. " Bushnel street and Stewart avenue.
1 N. W. " " " Buddan street.
1 N. W. " " " Wentworth avenue.
1 S. W. " Butterfield and Twenty-seventh streets.
1 S. W. " " Thirty-first streets.
1 S. W. " Burnside and Twenty-ninth streets.
1 S. W. " " Thirty-first streets.
1 N. W. " Egan and Lake avenues.
1 West side of Ellis bet. Wahpanseh and Egan avenues.
1 N. W. corner of Egan and Ellis avenues.
1 N. W. " Franklin and Tyler streets.
1 N. E. " Grove and Purple streets.
1 East side of S. Halsted south of bridge.
1 North side of Hickory bet. Main and Deering streets.
1 S. W. corner of Hickory and Main streets.
1 N. W. " Indiana avenue and Thirtieth street.
1 N. W. " " " Thirty-second street.
1 S. W. " " " Thirty-third street.
1 West side of Lime street at the R. R. tracks.
1 West side of Lake south of Wahpanseh avenue.
1 S. W. corner of Lake avenue and Oakwood street.

1 West side of Lake bet. Wahpanseh and Egan avenues.
1 S. W. corner of Main and Lyman streets.
1 N. W. " " Wrong streets.
1 S. W. " State and Thirtieth streets.
1 S. W. " " Thirty-first streets.
1 At the Engine House on Sanger street.
1 S. W. corner of State and Thirty-second street.
1 N. W. " Twenty-ninth and Wabash avenue.
1 S. W. " " Prairie avenue.
1 S. W. " Twenty-fifth and Calumet avenue.
1 S. W. " Thirtieth and Prairie avenue.
1 N. W. " Thirty-first and Prairie avenue.
1 N. E. " Twenty-fifth and Prairie avenue.
1 N. W. " Twenty-fourth and Butler streets.
1 N. E. " " " Stewart avenue.
1 S. W. " Twenty-second and Kankakee avenue.
1 N. W " Twenty-sixth and Halsted streets.
1 N. W. " " " Sanger streets.
1 N. E. " " " Butler streets.
1 N. E. " " " Hanover streets.
1 S. W. " Wallace and Kossuth streets.
1 S. W. " " " Twenty-sixth streets.
1 S. W. " Wabash avenue and Twenty-fourth street.
1 S. W. " " " " Thirty-second street.
1 S. W. " Wentworth avenue and Twenty-sixth street.
1 Ellis Park at north end of Langley street.
1 N. W. corner ot Wahpanseh and Cottage Grove avenues.

53 Total in the South Division.

WEST DIVISION.

1 N. W. corner of Arthur and Eighteenth streets.
1 N. E. " Bunker and Halsted streets.
1 S. W. " Bawans and Blackhawk streets.
1 N. E. " Blue Island avenue and Frank street.
1 N. W. " Bickerdike and Indiana streets.
1 S. E. " Centre av. and Catherine street.
1 S. E. " " " Sixteenth street.

1 At the Gas Works on Centre avenue.
1 N. E. corner of Carroll and Paulina streets.
1 Carroll street at the River for use of "Tugs."
1 N. E. corner of Carroll and Hoyne streets.
1 S. W. " Carpenter and Fulton streets.
1 S.W. " Centre av. and Evans street.
1 S. W. " Centre av. and Luke street.
1 North side of Cornelia bet. Reuben and Noble
1 S. W. " Centre av. and Walsh street.
1 N. W. cor. Chicago av. and alley in rear of N.W
1 At the Engine House on Chicago avenue.
1 N. E. corner of First and Wood streets.
1 N. E. corner of Fulton and Hoyne streets.
1 N. W " " First and Armour streets.
1 North side of Frank, bet. Blue Island ave. and
1 N. W. corner of First and Reuben streets.
1 N. W. " " " Bickerdike streets.
1 N. W. " " " Noble streets.
1 N. W. " Green and Tyler streets.
1 N. W. " " " Pratt streets.
1 S. W. " " " Fulton streets.
1 N. W. " Halsted and Twelfth streets.
1 N. E. " Harrison street and Centre ave
1 N. W. " Honore and Van Buren streets
1 N. W. " Jackson and Seeley streets.
1 S. E. " " " Fourth avenue.
1 N. W. " Kansas and Loomis streets.
1 Lumber st., opp. Flint & Thompson's Grain E
1 N. W. corner of Leavitt and Fulton streets.
1 N. W. " " " " Kinzie streets.
1 N. W. " " Milwaukee avenue and Divisi
1 N. W. " " " " " Ridge
1 S. W. " " May and Walsh streets.
1 N. W. " " " " Evans street.
1 S. W. " " " " Luke streets.
1 N. W. " " " " English streets.
1 S. W. " " " " Hubbard streets.
1 S. W. " " " " Kinzie streets.

1 N. W. corner of Mitchell and Morgan streets.
1 N. W. " " " " Margaret streets.
1 North side of Mitchell, bet. Morgan and Waller streets.
1 S. W. corner of May and the line of First street produced.
1 N. E. " " Monroe and Leavitt streets.
1 S. E. " " Mather and Jefferson streets.
1 N. E. " " Nebraska and Laflin streets.
1 N. W. " " " " Loomis streets.
1 N. W. " " " " Throop streets.
1 N. W. " " Noble and Indiana streets.
1 N. W. " " Peck and Fulton streets.
1 opp. Peck street on Depot place.
1 N. W. corner of Polk and Sholto streets.
1 N. W. " Peck and Carroll streets.
1 N. W. " Paulina and Kinzie streets.
1 S. W. " Reuben and Tyler streets.
1 N. W. " " " Jackson streets.
1 S. W. " " " Van Buren streets.
1 N. W. " " " Bauwans streets.
1 N. W. " Sholto and Gurley streets.
1 N. E. " Sampson and Laflin streets.
1 N. E. " Sixteenth and Nutt streets.
1 N. E. " Taylor and Canal streets.
1 N. W. " Twenty-second and Loomis streets.
1 N. W. " " " Throop streets.
1 N. W. " Throop and Kansas streets.
1 N. W. " Union and Luke streets.
1 N. W. " " " Barber streets.
1 N. W. corner of Van Buren and Seeley streets.
1 N. W. " Warren and Oakley streets.
1 N. W. " Waller and Coolidge streets.
1 N. W. " " " Frank streets.
1 N. W. " Washington and Sheldon streets.
1 N. W. " " " Laflin streets, produced.

79 Total in the West Division.

NORTH DIVISION.

1 N. E. corner of Asylum place and Orchard street.
1 N. W. " Burling and Willow streets.
1 West side of Burling street, at North end of pipe.
1 S. W. corner of Clark street and McCagg place.
1 N. W. " Dayton and Willow streets.
1 N. W. " " " Clay streets.
1 N. E. " Florimund and Franklin streets.
1 N. W. " Howe street and Centre avenue.
1 West side of Howe, between Willow and Centre.
1 N. W. corner of Hurlbut and Blackhawk streets.
1 N. W. " " " Schiller streets.
1 N. E. " Linden and Church streets.
1 N. W. " Lincoln avenue and Sophia streets.
1 N. E. " Larrabee and Sophia streets.
1 N. W. " Maple and Clark streets.
1 N. E. corner of Ohio and Kingsbury streets.
1 N. W. " State " Huron "
1 North side of Whiting east of Wells street.
1 N. W. corner of Wells and Kinzie streets.

19 Total in the North Division.

In all, 151; making, together with those previously put in, 1,070 hydrants in the city to April 1st, 1869. 74 were taken out and renewed during the year.

Owing to the precautions taken and the unusual mildness of the winter, but 110 hydrants got frozen and had to be thawed out, and these, with a few exceptions, were in localities to which the sewerage does not yet extend.

STOP-COCKS.

The following stop-cocks were put in during the year, viz:

SOUTH DIVISION.

1	6	inch,	Archer avenue,	West	line of	Reuben street.
1	6	"	Calumet "	South	"	Twenty-second street.
1	4	"	Burnside street,	"	"	Thirty-first street.
1	4	"	Butterfield "	"	"	Thirty-first street.
1	4	"	Hickory "	West	"	Main street.
1	8	"	Twenty-ninth street,	East	line of	State street.
1	8	"	Thirty-first "	"	"	" "
1	8	"	Thirty-second "	"	"	" "
1	8	"	Twenty-sixth "	"	"	Clark "
1	8	"	State "	South	"	Thirty-first street.
1	6	"	Wallace "	"	"	McGregor street.
1	6	"	Wentworth avenue,	"	"	Twenty-fourth stree
1	6	"	Wabash "	"	"	Thirty-first street.

13 Total number in the South Division.

WEST DIVISION.

1	4	inch,	Burlington,	South	line of	Sixteenth street.
1	4	"	Baldwin,	North	"	Kinzie street.
1	4	"	Bauwans,	West	"	Reuben street.
1	6	"	Centre av.,	South	"	Sixteenth street.
1	6	"	" "	"	"	Twenty-second street.
1	4	"	Carroll,	West	"	Reuben street.
1	8	"	Desplaines,	South	"	Polk street.
1	4	"	Ewing,	West	"	Halsted street.
1	6	"	Harrison,	"	"	Centre avenue.
1	6	"	Kinzie,	"	"	Lincoln street.

1	6	inch,	Loomis,	South line of	Adams street.
1	6	"	Milwaukee avenue,	North line of	Division street.
1	6	"	" "	South "	Chicago avenue.
1	4	"	May,	North "	Kinzie street.
1	6	"	"	South "	Chicago avenue.
1	8	"	Morgan,	" "	Sixteenth street.
1	8	"	"	" "	Twelfth street.
1	4	"	Nutt,	" "	Sixteenth street.
1	6	"	Noble,	North "	Kinzie street.
1	6	"	Paulina,	" "	" "
1	8	"	Sixteenth,	West "	Halsted street.
1	6	"	Twenty-second,	" "	Centre avenue.
1	8	"	Union,	South "	Twelfth street.
1	8	"	"	" "	Sixteenth street.
1	16	"	"	Opposite the	High School.
1	6	"	Van Buren,	West line of	Throop street.
1	6	"	"	" "	Centre avenue.

27 Total number in the West Division.

NORTH DIVISION.

1	4	inch,	Hills,	West line of	Wells street.
1	8	"	La Salle,	North line of	North avenue.
1	8	"	"	" "	Schiller street.
1	4	"	Wendel,	West "	Wells street.

4 Total number in the North Division.

In all, 44; making, together with those previously put in, 501 stop-cocks in the city to April 1st, 1869; 17 stop-cocks were renewed during the year.

THE LAKE TUNNEL.

With two slight exceptions, this has continued to work with entire satisfaction. The first difficulty was owing to leaving the fish screens in the gate openings of the Lake Shaft too late in the season, when they became obstructed by anchor ice. They were taken out, when it was supposed no further difficulty would occur during the winter; but very early on Christmas morning the entire gateways were obstructed by anchor ice. Fortunately the tug employed by the Board was in readiness to leave, and after a little delay, caused by ice at the mouth of the river, the crib was reached, and the anchor ice removed; but before every thing could be restored to its usual condition the reservoirs were emptied and the whole city was out of water nearly three hours. As this occurred, however, after early breakfast, many people did not know the water was shut off at all, and happily there was no great inconvenience caused by it.

The outside of the crib, which had been considerably cut away by ice, was resheathed above and below the water line, and the angle irons at the south corner extended downwards two feet. Judging from examinations made by the diver, Mr. P. E. Falcon, it will be best to carry out soon the original design of erecting a permanent stone structure on the crib from as far below as may be possible. A plan of this structure has been prepared.

As promised in the last Annual Report, there will now be presented, with illustrations at the end, a

DESCRIPTION OF THE LAKE TUNNEL.

In order to show the necessity for this structure, which no one now doubts, but which was not so clearly seen when the subject of procuring a better supply was under discussion between the years 1860 and 1864, it will be proper to give a brief history of the

PREVIOUS MODES OF SUPPLY.

Although old maps show that the name of the present site of Chicago was called Chicagou more than a hundred years ago, yet the foundations of the city proper were not laid till 1833. From that date till 1840, when the population was about 4,500, no other supply than ordinary wells and cisterns existed, except what was carted from the lake. Then the old Hydraulic Works were erected by a private corporation. These consisted of an 18 inch inlet nearly 700 feet long from a crib in the lake to a well 15 feet deep, the inlet bending down nearly to the bottom; of pumping works on the lake shore, at the foot of Lake street; and of wooden supply pipes, of which latter, before the abandonment of the works, there were several miles, none of which exceeded 6 inches in diameter, and most of which were 2 and 3 inches. The greatest quantity ever supplied by these works is not accurately known. The engine and house have long since been removed, and the ground where the inlet was filled up. The Adams House occupies the site of the old works. The wooden pipes are frequently dug up in excavating for sewers and iron water pipes, and appear to be perfectly sound.

In 1851, when the population was about 35,000, a charter having been obtained by the city, the present works were commenced. Under the direction of the Board of Water Commissioners, the Pumping Works were located on the Lake shore on the north side of Chicago River. In recommending this site the Chief Engineer, Mr. Wm. J. McAlpine, said:

"It is very questionable whether the small quantity of water which is discharged from the river would affect the quality of the water in the lake at a point one and a half miles south.

"From the consideration which I have given to the subject, I am of the opinion that there is no perceptible difference between the quality of the water in the lake above the pier and at the place one and a half miles south of the river, on which the estimates have been predicated."

The works were put in operation February, 1854. They consisted of one reservoir, containing about half a million gallons,

and 8¾ miles of iron pipe, besides the pumping works already described in Mr. Cregier's report. The population at this time was about 70,000.

ACTION OF WATER COMMISSIONERS RELATIVE TO BETTER SUPPLY.

The increased growth of the city after that time, and the introduction of sewerage, together with the establishment of packing houses, distilleries, &c., caused such a change in the quantity of filth flowing into the lake that complaints began to be made of impurity and offensiveness occasionally in the supply from the pumping works. In 1860, one of the Water Commissioners, Mr. Edward Hamilton, proposed to sink a wrought iron pipe, 5 feet in diameter, one mile out into the lake to obtain a supply beyond the effect of the river. This project was referred to the Chief Engineer of the Board of Sewerage Commissioners to examine and report upon, with the request "that he also take under consideration and report on the matter of erecting additional pumping works in such locality as shall secure a supply of pure water."

The report made in compliance with the foregoing request did not recommend the immediate adoption of any plan, but discussed various projects. Among others, that of a tunnel was suggested; but it was thought best to defer the whole subject until further examination and analysis could be made, in the hope that much of the complaint against the water supply might prove imaginary.

What, however, was at first apparent only to the most sensitive organizations, soon grew evident to all, and in the course of two or three years more, the water supply became occasionally very offensive both to the taste and smell. A remedy for this state of things could no longer be neglected.

ACTION OF BOARD OF PUBLIC WORKS RELATIVE TO BETTER SUPPLY.

The Board of Public Works, which was created in 1861, discussed the various projects that had been suggested, and made experiments with filtering, which, however, they soon saw would not answer. The engineer of the Board, after much doubt and careful examination of the whole subject, became more

inclined to the tunnel plan than any other, as combining greater directness to the nearest inexhaustible supply of pure water, with permanency of structure and ease of maintenance. The possibility, and in the estimation of many, the great probability of meeting with insuperable difficulties, in the nature of the soil, or storms, or ice on the lake, was fully considered. One by one the objections appeared to be overcome, either by providing against them, or discovering that they had no real foundation. The plan, when so far worked out as to show how the tunnel might be constructed, was submitted to different engineers, among the number Col. J. D. Graham, U. S. Engineer, Mr. John B. Jervis, Captain Wm. H. Swift, and L. H. Clarke, chief engineer Illinois Central R. R., all of whom expressed their belief in the practicability of the scheme. Benj. Carpenter, Esq., first president of the Board of Public Works supported the plan warmly from the time it was explained to him; and the Hon. Wm. B. Ogden, though not a member of the Board, offered very early in the history of the project to advocate it publicly if it should be necessary. The other members of the first Board—Messrs. J. G. Gindele and F. Letz—though very cautious and somewhat doubtful at first, became satisfied with the general features of the plan. In the meanwhile, in consequence of legislative action, a new board was chosen, consisting of the two last-named gentlemen, Mr. O. J. Rose, and the Hon. F. C. Sherman, the mayor, who was *ex officio* a member. At the suggestion of Mr. Sherman, more thorough examinations of the soil, consisting of borings every 500 feet, were made. These fully confirmed what was previously inferred from the known character of the foundation underlying the north-eastern portion of the city and extending out under the lake. The whole Board were now prepared to recommend the project to the City Council.

ACTION OF THE CITY COUNCIL RELATIVE TO TUNNEL PLAN.

A committee was appointed by the latter body to consider the subject. This committee consisted of Messrs. C. L. Woodman, J. A. Hahn, and F. C. Brown, aldermen; F. C. Sherman, mayor; and S. S. Hayes, comptroller; some of whom were known to have strong doubts with regard to the propriety of undertaking

such a work; but the result of their investigations was a unanimous report in its favor. The City Council then passed the necessary ordinances, and the Board advertised the work for letting.

PREPARATIONS FOR LETTING THE WORK.

The opening of the proposals was looked to with great interest, as it was feared that no responsible parties would offer to take the work for less than millions instead of only about three hundred thousand dollars, the engineer's estimate; in which not only the public generally but the Board of Public Works themselves had no great confidence. The result was both surprising and gratifying to the Board. Seven bids were received, ranging in amount from $239,548 to $1,056,000. Owing to failure to appear with sureties at the proper time, and to objectionable conditions, the two lowest bids were rejected.

On the 20th of October, 1863, after considerable inquiry relative to the ability and qualifications of the parties, and a visit of the city's legal adviser, Benj. F. Ayer, Esq., to Harrisburgh, Pa., to ascertain the standing and pecuniary responsibility of the sureties offered, a contract was entered into for the execution of the work with Messrs. J. J. Dull and James Gowen, of Pennsylvania. To this proceeding the City Council had given their authority by an ordinance dated the 5th of the same month.

OPPOSITION.

About this time the public press, which had previously almost unanimously spoken favorably of the project, turned almost as unanimously against it. This opposition gradually diminished but did not cease entirely till the work was nearly completed.

An injunction against the construction of the work, as likely not only to end in failure, but to involve the city in a useless debt of millions, was seriously talked of, though not publicly discussed.

On the evening before the date of the contract, an ordinance was submitted to the City Council, to repeal the authority previously given to the Board of Public Works to enter into

contract for the tunnel. The preamble to this ordinance set forth that the construction of the proposed crib would be a permanent obstruction to navigation.

The Board of Public Works, to whom this subject was referred, stated in their answer that "The opinion of Mr. Ayer, "submitted herewith, shows that the city has clearly the right to "build the piers; that Congress, by its paramount authority, "may declare the same unlawful structures, and authorize the "courts to remove them; but that all previous court decisions "establish that, before being ordered removed, the piers must "first be shown to be serious obstructions to the lake navigation.

"The piers with their beacon lights will, we think, be helps "and not hindrances to navigation,—helps to show the sailor his "position while in safe waters.

"The Board have, however, already taken steps to procure "the sanction of Congress to the erection of the piers; but, if it "comes to the worst,—that is, if the structures are declared "unlawful, and the piers are proved to be serious obstructions to "lake navigation, and the courts order the city to remove them,— "the Board will remove them to such a depth below the surface "of the lake that they cannot endanger navigation, as has been "contemplated from the first, and as may be done at any rate."

The repealing ordinance was not passed.

OUTLINE OF THE PLAN.

The plan of the work, as thus determined upon, consisted of a land shaft at the western and a lake shaft at the eastern extremity, to be permanent, and three intermediate lake shafts for expediting the construction, to be removed on the completion of the work. The tunnel proper to be two miles in length, beginning on the lake shore near the pumping works, and extending outward in an east north-easterly direction. The shafts to be protected by cribs, or hollow pentagonal breakwaters, from storms, vessels, and ice.

The horizontal diameter of the tunnel was fixed at five feet, and the vertical two inches greater, for convenience in drawing the centres during construction. This size was determined upon for two reasons: *First*, it was sufficient to deliver a supply for

one million of inhabitants at the rate of fifty gallons a day for each person, the average quantity used at that time. *Second*, experience in Europe had shown, that while it was possible to make small tunnels in the most troublesome ground, the attempts to make large ones had sometimes failed, and at others had been attended with enormous difficulties. This was particularly the case in works of the kind described by Minard in his *Cours de Construction*, pp. 284, 285, and in the earlier as well as later efforts to construct a tunnel under the Thames.

Although there was every reason to expect easy work here, there was a possibility of meeting with deposits of quicksand or other soft and wet material. In order to remove, as far as practicable, every doubt of the final success of the work, this small size was adopted, in the full conviction that whenever it should prove insufficient to supply the demand upon it, the population and wealth of the city would be abundantly able to construct another, and, if necessary, a larger one.

CONSTRUCTION OF THE WORK.

The work was commenced at the land shaft on the 17th of March, 1864, the delay since the date of the contract having been caused by waiting for the cast iron cylinders, which had been ordered by the Board, for the first thirty feet, instead of the brick shaft as originally intended.

These cylinders are 9 feet internal diameter, 1½ inches thick, and in three sections, each 10 feet long. The bottom of the lowest section has a cutting edge. The sections were united by internal flanges, bolts and rust joints. The top flange of the cylinder was fitted to receive an air lock, in case that should have proved necessary in the prosecution of the work.

It was intended originally to make the lining of the land shaft of brick clear to the top, but the Board feared trouble from the quicksand which extended down about 14 feet from the surface, and particularly as the inlet through which the city was supplied was not only in this quicksand, but very near the shaft. Owing to the want of suitable pumps, there was unexpected delay in sinking the cylinders, but as soon as the clay had been penetrated a few feet, all serious difficulty ended, and the remainder of the

shaft was sunk to its proper depth through clay of various degrees of tenacity, from very soft near the top to indurated near the bottom. Before reaching the bottom the contractors requested the Board to allow them to go deeper than the plan called for, in order to have a thicker roof under the bed of the lake; but on meeting with water and gas, they concluded that a greater depth would only bring them into greater difficulties, and were content to carry out the original design. The shaft was walled up 8 feet in diameter, with masonry 12 inches thick, to the bottom of the cast iron, the inside of which was laid with masonry to the top of the lowest section. At the bottom of the shaft there was a sump 6 feet deep below the bottom of the tunnel. This had to be emptied generally twice a day during the whole progress of the work, as the quantity of water discharged from a spring there continued very uniform.

From the bottom of the shaft a drift, at first only intended to be temporary, was made about 50 feet long, westward, with a chamber at the end with fixtures for mounting a transit. The regular tunnel work eastward was commenced May 26th, 1864.

Here much pains was taken to introduce a curved surface in the masonry between the shaft and upper side of the tunnel, and it was satisfactorily accomplished. The entrance to the tunnel was made 6 feet in diameter, and tapered down to 5 feet in a distance of twenty feet. The masonry on this portion was made of three shells of brick work, each four inches thick, with cement joints half an inch thick between. The rest of the tunnel proper was lined with two shells of brick work. It was intended at first to fill the cavities around the outside of the brick work with well tamped earth, but it was soon found impossible to get this done in a satisfactory manner. For this reason, solid masonry was almost immediately substituted for the tamped earth. The upper arch was built on a ribbed centre of boiler iron, which diminished the open space inside of the tunnel only 4¼ inches, and thus allowed the cars, which conveyed away the earth, to go up to the face of the excavation, usually kept from ten to twenty feet ahead of the masonry. The iron centre was thirty inches long in the direction of the tunnel. About two feet in length of masonry was usually laid at a time, and as a rule it was found

safe to strike the centre within fifteen minutes after the arch was keyed. At first it was supposed necessary to excavate nearly a foot above the top of the brick work, in order to give the masons room to build the upper arch; but very soon it was found that they could build it perfectly well, generally, without making the excavation any larger than the space required for the brick work. This was done by driving the last four or five top courses of brick into well tempered cement mortar first thrown into the cavity. The driving of the bricks effectually filled up the spaces which could not otherwise have been reached by hand. The ends of the masonry were left "toothing" and thus furnished a guide in driving the bricks on the upper arch. The lower arch was built by templets or patterns, as ordinary sewers are, and usually kept some six feet in advance of the upper arch, to allow of greater convenience in loading the cars with earth, which the miners had to keep at some distance behind them, and which the shovelers could not throw into the cars very well, when they stood under the brick work.

The excavation was, generally, through stiff blue clay, but with the irregularities of character peculiar to the drift. It very seldom required bracing when not left to support itself more than thirty-six hours. Sometimes sand pockets were met, and when those were over the upper arch, they would empty themselves partly, leaving cavities to be filled with masonry, but these were seldom of much importance. Sometimes small bodies of quick-sand were encountered, but they occurred only in pockets and not in strata, and therefore gave no serious trouble. Sometimes the clay would be soft enough for a miner to run his arm into it, but, with the exception of requiring a little more "trimming" for the masonry, this gave no trouble. Sometimes boulders, weighing several hundred pounds, were met, and interfered a little with the regular progress of the work, but seldom more than a little.

The greatest and most dangerous difficulty met with was one that was not anticipated at first, and that was inflammable and explosive gas. Early in the progress of the work several accidents occurred from this cause, but fortunately without fatal results to the workmen, though there were several narrow escapes.

Very soon the miners learned to detect the proximity of cavities containing this gas from the sound produced by striking over them with their picks. When a cavity was thus detected, it was bored into with a small auger, and the gas ignited as soon as it began to escape. In this way explosions were prevented, which otherwise took place when large bodies of gas were suddenly allowed to mix with the air. The explosions that did occur were slight in character, but left a body of flame in the upper part of the tunnel. At such times the miners fell with their faces to the ground, and thus escaped without any greater injury than singed beards and eyelashes, and blistered faces, except in the first severe case when a miner was badly burnt. At this time the gas kept the miners out of the tunnel three days.

CHAMBERS.

With trifling exceptions, this work was prosecuted day and night by means of two sets of miners and one of masons, working eight hours each in every twenty-four, for six days in the week, till the 16th of October, when a point about 750 feet from the center of shaft was reached. Here it was determined to make two temporary chambers, one on each side of the tunnel, with which they were to be connected by small and short openings. It took about one week to construct these chambers and connections, all of which were supported by timbers and planks. In the tunnel and at the connection between the chambers a turn-table was placed. This arrangement permitted not only the passage of cars by each other, but also the making up of trains, which soon became an absolute necessity for the economical and rapid execution of the work. By means of such chambers, it was practicable to carry on the work a mile or more out under the lake as fast as could be done near the bottom of the land shaft; in fact, the progress upwards of a mile out was really greater than it was near the shore, owing to the greater skill and experience acquired on the way. A gap of about six feet in the masonry of the tunnel was left at the connection between these, the first chambers, to be built in after the completion of the rest of the work. After two or three weeks, several cracks, entirely around the tunnel, were discovered in the brick work within a distance of about 12

feet, on each side of the turn-table. There were various conjectures as to the cause of these cracks, for up to this time repeated careful observations had shewn no indications whatever of any movement in the masonry after the keying of the upper arch. Occasionally, in soft ground, the sides of the lower arch had been pressed in an inch or two before the upper arch was built, but no transverse crack was ever discovered except those near the chambers. The conclusion was that they were probably caused by the yielding of the earth in the pit of the turn-table; yet, no settlement in the masonry was observed.

The second set of chambers was made one thousand feet beyond the first, and the character of the work, as well as the mode of carrying it on, continued the same, except that the use of mules was substituted for men in the transportation of earth and materials for the masonry. Stout abutments were built on each side of this turn-table to prevent the cracking of the brick work, observed on each side of the first, but just the same number and character of cracks occurred, notwithstanding. It then became evident that these cracks were owing to a tendency in the clay to move, or "creep," as it is sometimes expressed, towards any cavity made in it. The gap left at the connection between the chambers being only temporarily supported with wood, could not wholly prevent this creeping movement. It was, therefore, determined afterwards to continue the brick work over and around the next turn-table, and to brick around the connections between the chambers, groining carefully their intersections with the tunnel. After this method of constructing the chamber connections was carried out, all trouble from cracks ceased. In this manner, placing the sets of chambers about a thousand feet apart, the work was continued to about a mile and a half from the land shaft.

The character of the work continued throughout very much the same. The greatest progress made during any one week was 93 feet. Only once was a boulder so large as to require blasting met with. There was a little nervousness as to the effect of a blast under the lake, but it caused no serious disturbance either of the ground or the masonry.

VENTILATION.

The ventilation of the tunnel was effected by means of tin pipes, through which the foul air was drawn out and fresh air consequently drawn in through the main opening. At first a six inch pipe was used, and this was connected with the furnace of the hoisting engine. Later it became necessary to provide an engine and fan expressly for the purpose and to put in larger pipes. Eight inch ones were introduced. It was difficult to keep the joints of the pipes, which were only of ordinary tin, very tight, especially near the chambers, where the mules struck them with their heads in turning. Still, they answered a very good purpose, and the air, a mile and a half out, was about as good as it was much nearer to the land shaft. Ordinarily there was so much smoke from the miners' lamps and vapor from the heat of the workmen as to make it impossible to see distinctly enough to run the lines and levels required to keep the tunnel in the right direction. On Sunday nights, however, and on other holidays, the air became so clear as to cause sperm candles to burn with a beautiful silver brightness, visible sometimes two thousand feet.

ALIGNMENT.

To determine the position of the lake shaft and the line of the tunnel, much pains was taken to establish an accurate base on the shore for purposes of triangulation. Owing to the buildings in the way, this was no easy task. For the alignment of the tunnel an astronomical transit of four inch aperture, by Pike of New York, was mounted on a tower built for the purpose, 166 feet westward of the land shaft, and sometimes used in the chamber below already described. To aid in placing the lake shaft beyond all doubt in the line of the tunnel, a 6 inch tube was sunk 280 feet eastward of the land shaft, after the masonry had been carried beyond that point. By plumbing up through this tube, a "range" of great accuracy for such a purpose was obtained. The astronomical transit could only be used on the tower above or in the chamber below. As soon as the work had been carried so far that the sperm candles used in the alignment could not be seen

at "the face" of the work, the centre line was produced from point to point by means of a goniometer with two telescopes which, when in perfect adjustment, could be made to "reverse" on the same point, which was thus proved to be in a straight line with the instrument and the "back sight." All of these operations, as well as those necessary for lines and levels at the crib afterwards, were under the immediate direction of Mr. Wm. H. Clarke, the principal Assistant City Engineer, who continued personally to attend to them until other duties and impaired health made it necessary for him to keep out of the tunnel. The final and very satisfactory result with regard to lines and levels, mentioned hereafter, prove the great care and accuracy with which Mr. Clarke conducted his operations.

INSPECTORS AND DOINGS OF THE DIFFERENT SHIFTS.

It was deemed a matter of great importance on the part of the Board of Public Works to have a representative constantly in the tunnel, not only to see that the work was done properly, but to take prompt measures for its safety in case of accident or threatened danger. At first, Messrs. Herman Kroeschell, Edward Everett and George Dewer were employed.

Mr. Kroeschell, an educated and experienced mining engineer, was principal inspector of mining, and directed the "trimming" shift, which worked the eight hours immediately before the masons commenced. He set the "patterns" by which the masonry was built, producing for this purpose the lines and levels given by the engineer in charge, by means of plummets, ranges with sperm candles, and spirit levels. His shift consisted usually of four miners and four other men, who at first pushed the loaded cars to and from the shaft, but afterwards to and from the nearest chambers, from which they were hauled by mules to the shaft and back again, either empty or loaded with brick, cement or sand. Only two of the miners usually were regularly trained men, the others being but picked laborers, who soon learned to use mining tools in the clay. The general custom was for two miners to work together for ten or fifteen minutes at a time with more than common vigor, and then rest. The pushers

loaded the excavated earth into the cars, brought as near the face as possible on a movable truck. This shift, besides frequently carrying the face of the excavation five feet ahead, did all the trimming necessary to form the interior of the excavation as nearly as possible to the exact outside shape of the masonry. The next, or mason's shift, was under the constant inspection of Mr. Everett, employed for years previously in this city as very efficient inspector of sewers. This shift usually consisted of three masons, one mortar mixer, and four to six helpers, according to the distance between the chamber and the work. The water for mixing the cement mortar was all brought from the top of the land shaft in tank cars, made especially for the purpose.. The principal cement used was that known here as "Clark's LaSalle," but there was also a considerable quantity of the Falls City Louisville, and some of the Akron, N. Y. The cement and sand were mixed together in equal quantities. It will be a matter of much interest when the tunnel is again entered for examination, to ascertain the relative degrees of hardness and probable durability of the different kinds of cement used. The average length of masonry laid by this shift was 12 feet a day, for the entire distance, but for the first 2,000 feet the greatest progress scarcely equalled this rate. Afterwards it sometimes reached 15⅓ feet a day; but this latter rate could only be attained by putting on a couple of miners during this shift. The earth they excavated could not be removed from the tunnel while the masons were in, and consequently delayed to some extent the operations of the next or principal mining shift; but this course enabled the contractors to advance the whole work two feet more a day than they could have done without it.

The principal mining shift was under the inspection of Mr. Dewer, an experienced miner. His chief duties were to keep the excavation within the proper lines and to watch carefully for the approach of bad ground, so as to be ready with bracing, or to take any other course the emergency might require. Mr. Dewer's health failed during the progress of the work, and he was succeeded by Mr. Edward Offermann, who continued till the tunnel was completed. This shift consisted of four miners and four pushers.

OPERATIONS ABOVE GROUND.

The operations above ground were under the immediat
tion of Mr. John P. Offermann, the contractor's superint
There were two shifts of mechanics and laborers employ
each during twelve hours of the day. The whole force
consisted, generally, of one superintendent, one night fo
two engine tenders, four topmen, one day laborer a
carpenter. Two mules were constantly employed, and o
in reserve in case either of the others should fail. All the
were carefully inspected above ground, by Michael V
an employe of the Board.

PLAN AND CONSTRUCTION OF THE CRIB.

Preparations for commencing operations at the outer en
tunnel were early made, but owing to disappointments of t
tractors in getting the necessary timber for the crib, an
delays, the foundations of the outer, and only one it wa
necessary to build, were not laid till May, 1864. This w
on the north side of the river about 800 feet west of th
House. The dimensions of the crib as required by the
cations, are 58 feet horizontal measurement on each of t
sides, and 40 feet high. The inner portion, or well, h
parallel with the outer ones, and 22 feet long each, leav
distance between the inner and outer faces of the crib, c
ness of the breakwater, 25 feet. This breakwater was l
a flooring of 12 inch white pine timber laid close togethe
outer and inner vertical faces and the middle wall l
them were all of solid 12 inch white pine timber, exc
upper 10 feet of the outside, which was of white oak, to wi
better the action of ice. Across the angles of the ou
middle walls were placed brace walls about 10 feet long,
12 inch timber. The middle wall on each side of the c
continued straight through to the outside wall. Connect
outer and inner walls, and passing through the middle wa
cross-ties of 12 inch timber, placed horizontally about 9 f
vertically one foot apart. The ends of all the timbers
they passed through the outer and inner walls, were dov



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ed half and half into the timbers of the middle wall. timbers used were carefully inspected and well jointed, s mostly done by hewing, though nearly all of it was d. It was found impossible, however, to get sawed perfectly uniform dimensions. The floor timbers were ound timbers placed directly under the outer, middle walls of the crib. Round 1½ inch bolts, 36 inches long, washers at the bottom, were placed vertically, 4 feet hold the ground and floor timbers firmly to the first es of wall timbers above the flooring. All of the wall ere fastened to each other by 1¼ inch square bolts 34 g, pointed and driven somewhat slanting into 1¼ inch es, about 5 feet apart. The slant was given in opposite to the bolts nearest each other, to avoid the possibility eing drawn out by the buoyancy of the timber, an hich once occurred to a somewhat similar structure in

ectangular openings, each 4 feet wide and 5 feet high, e through the breakwater at different depths below the the lake, so that water could be drawn from near the iddle or top, as future experience might show to be ese openings, and wells 4 feet square from them to the breakwater, were timbered around in the same careful s the rest of the crib. Each well was provided on its e with slides for a temporary gate to cut off the water thought necessary.

or and walls of the crib were all carefully calked. The f the breakwater was divided into seven water-tight ents, made so by the calking already mentioned, and l sheathing" between the walls. The object of these t compartments was to make it easy to build solid in the whole of the breakwater at any time within the a few years, if it should be thought best. The whole tside surfaces of the outer and inner walls were sheeted inch pine plank carefully jointed, placed vertically and . Instead of pine, three inch white oak was used for portion of the outside, to resist the ice. The upper 10 ch outside corner was protected by angle-irons, extend-

ing each way two feet, and one inch thick, and firmly fastened by 2 inch round bolts. From the bottom to the top of the crib, and into which the ends of the angle-irons were let, there were ten pieces of white oak, 5×14 inches, fastened every two feet to the middle wall with 2 inch round bolts. Similar pieces 3×12 inches, 39 feet long, reaching from the top of the crib to the flooring, were fastened by the same bolts to the inside of the middle wall. It will thus be seen that apparently excessive care was taken to make the crib strong; but subsequent experience showed that this care was none too great.

LAUNCH.

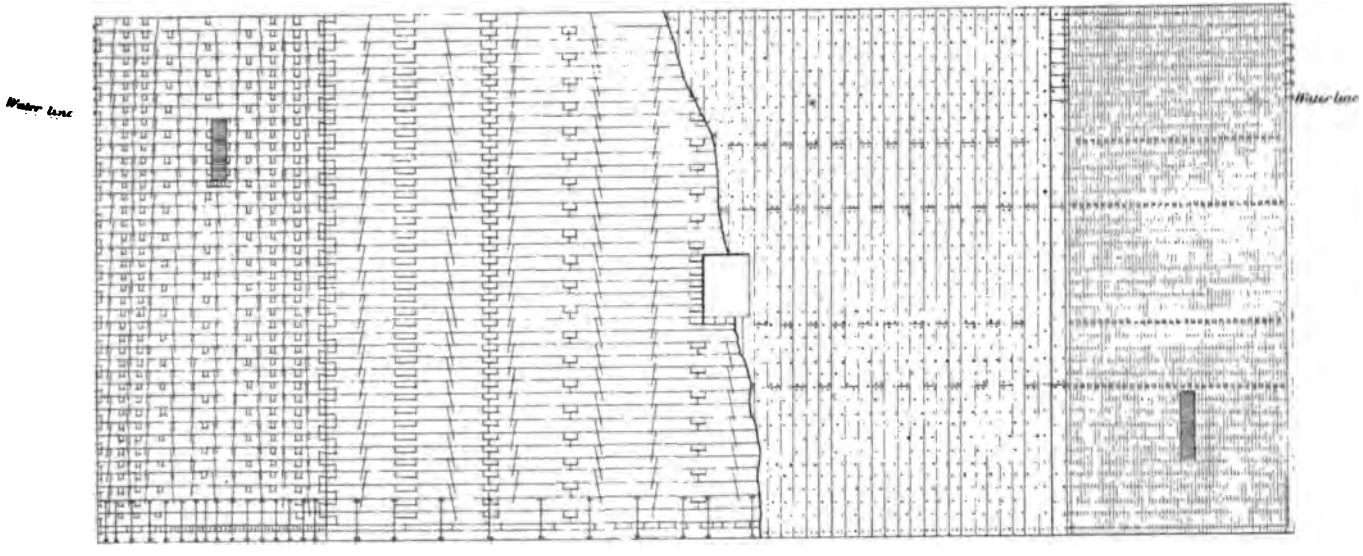
The crib, when built, was in a horizontal position. In order to launch it, it was raised by screws and inclined at an angle of 1 in 12 towards the water. Seven ways were placed under it and extended out 64 feet into the river on trestle work. The river portion of the ways gave a great deal of trouble on account of the uneven and stony character of the bottom, and accidents caused by passing vessels. Everything being ready, the launch took place on the 24th day of July, 1865, when the crib glided without accident or delay gracefully into the water, in the presence of a large number of spectators.

SUPERINTENDENCE.

The contractors employed as their foreman, in the construction and launching of the crib, Mr. Geo. R. Bramhall, a mechanic of unusual skill and judgment. The Inspector placed over the work by the Board was Capt. A. S. Bergh, who had previously had the immediate charge of the lake borings made before the work was let.

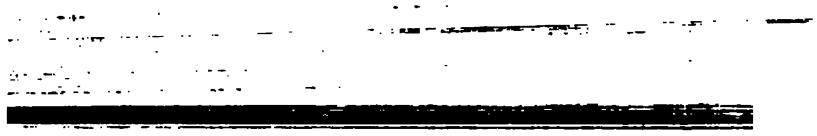
PLACING AND FILLING OF CRIB.

Immediately after the launch, the contractors towed the crib out to its position in the lake. As soon as the bar was passed, three small gates near the bottom of the crib were opened, and the draft of water, which at first was but a little over 8 feet, increased soon after reaching the anchoring ground to 21 feet. A mooring screw, opposite the intended position of each angle of



ELEVATION OF CRIB

SHOWING METHOD OF BOLTING AND SHEATHING SCALE $\frac{1}{m}$



rib, had been placed under the direction of Mr. Clarke. To mooring screw a 1½ inch chain cable was attached, and the e end of the chain fastened to a buoy. Unfortunately, lake ellers had destroyed three of these buoys, and it was thought t expedient to substitute for the sunken chains ordinary ors and hemp cables. As soon as the crib was brought near osition, the work of filling with loose rubble was commenced. y soon the crib got "out of trim," and one corner of it rested ne of the low bars, peculiar to the lake at this distance from shore. After some time had been lost in vain efforts to get crib righted and into its exact position, the Board became med for its safety, in case a severe storm should arise, and cted that no expense be spared that might seem necessary to engineer to secure it with the utmost despatch. A wrecking p was at once employed. By means of this, sufficient water pumped into or out of the crib, as occasion required, to right The partitions between the compartments failed, and it was atter of rejoicing that they did, for otherwise the removal of wrecking pump from one compartment to another could not e been made in time. Three powerful tugs were hired, ch, by the aid of sufficient tackle, finally towed the crib to its ct position.

STORM AND ITS EFFECTS.

mmediately the contractors resumed the operation of filling crib with stone, but very soon after a violent storm set in and ve the vessels loaded with stone into the harbor. This storm inued for three days, and threatened, before it abated, to do ous, if not fatal, injury to the crib. In order to hold it in its tion as firmly as possible, the wrecking pump was kept at k to fill it with water, the stone thrown in previously not g sufficient to hold it down. During the height of the storm, y wave caused a perceptible rocking of the crib. The angle- ts of the inner and middle walls began to separate, and for a caused intense anxiety. When the storm was over two of inner angle-joints had parted an inch on top, and the entire had worked, against wind and waves, thirteen feet, and the

north-west angle was 3¼ feet lower than the south-east. T great difficulty there would have been in restoring the crib to exact position, and the fear there might be another storm in t meantime, prevented any attempt of the kind from being ma The very slight deflection this rendered necessary in the line the tunnel was of no practical importance whatever, thou regretted, and the variation of the sides of the crib from perp dicular, though a constant eye-sore, did not affect its stabili The filling of the crib with stones was proceeded with as fast the contractors could, and since it was completed, about the mid of August, no variation whatever in the position of this str ture has ever been perceived. A slight tremor is sometimes f during severe storms and when large fields of ice are passi The rubbing of field ice against the crib is occasionally acco panied with a fearful noise. At such times the crib appears t spectator on it, to be an immense plough moving through the i On several occasions the broken masses lodged on the south si of the crib, forming banks several hundred feet long, and rea ing from the bottom of the lake to ten or fifteen feet above t surface.

The breakwater portion of the crib being filled with stone, t contractors erected over it a temporary wooden covering, wit light house on top, and rooms above and below for the accomm dation of their own men as well as the inspectors employed the Board. It may be said in passing, that the air was so p at this dwelling-place as to cause complaints, at first, from t cook, of the voracious appetites of the men. The reputation the crib for healthfulness is still maintained, the present kee being now quite vigorous and hearty although apparently a fee consumptive when he went there to live about eighteen mon ago.

CYLINDER AND LAKE SHAFT.

The cast iron cylinder for the lake shaft was made in Pi burgh, by Messrs. James Marshall & Co., who also made the o for the land shaft. It consists of seven sections, each nine fe in length, nine feet internal diameter, 2¼ inches thick, and in a other respects like the one for the land shaft, except that th

Ancre
ces of Lake
Bottom of Lake
SHO



t section was turned on the outside to make it penetrate the nore easily, and the upper end was provided with two gate- for the introduction or exclusion of the lake water. The ways are each 54 inches high by 32 inches wide, and placed their tops below the lowest known level of the lake. Each way was provided with a sliding gate on the outside of the der, raised by a screw worked at the top of the cylinder. isional arrangements were made at each gate opening for ing chambers on each side, in case it should ever be sary to repair either gate, by simply sliding in temporary . The sliding faces for those temporary gates, as well as e permanent ones, were made of "composition." Inclined were placed inside of the crib, during its construction, to a lowering the cylinder to its place, but the storm already ioned destroyed them. The lowest and next cylinder sections put together on an incline. They were held in place when red by chains on the outside secured to the lower end of the m section, and a brake over the upper side of the cylinder. were lowered gradually on the incline by means of screws hed to the upper flange. These screws had to be removed, urse, for every new section put on. Care was taken to have ns enough together, before removing the chains from the m of the cylinder, to reach above the water. This required or 45 feet altogether, to be sure. A false bottom of wood put into the cylinder at its lowest section, to keep out as water as practicable. This gave the cylinder great buoy- when sunk to a depth of 30 feet, and made it very easy to le with blocks and falls placed over-head. On being lowered ylinder sunk by its own weight two or three feet into the when the false bottom stopped it. A hole was then bored gh the false bottom and the cylinder went down several feet er by its own weight. After the sixth or gate section was n and the false bottom removed and excavation made within, ylinder continued to sink by its own weight. After the top n was put on, a moderate force only was necessary to push ylinder down 23 feet below the bottom of the lake. Below oint the work of sinking the shaft was substantially a repe- of that at the shore end of the tunnel, except that no water

was met with, and no pump ever put in or required. The little leakage that occurred was easily removed in buckets.

An extension eastward, about 50 feet, was made, in anticipation of the possible extension of the tunnel at some future day still further out into the lake. This was provided with the necessary sump and bottom on which to place another iron cylinder. The extension was of great service during the construction of the work as a turn out for the cars, and afforded, by means of a 6 inch tube, sunk perpendicular from above the surface of the lake to its outer end, an excellent opportunity to start the line of the tunnel below with great accuracy towards the deflecting point in the middle.

INSPECTORS.

As the contractors did not deem it important to employ Mr. Bramhall after the lake shaft was sunk, the Board, highly appreciating his skill and industry, engaged him to perform similar duties to those of Mr. Kroeschell, in tunnelling from this shaft. Four different inspectors of masonry were employed, but neither of them stayed long. One of them, Thomas McMahon, while employed afterwards in the extension of the land shaft, had his ankle broken, which was the only serious accident that occurred to any one whilst employed on the work. It was not considered necessary to have a special inspector for the regular mining shift, this being generally left to Mr. James Brown, the contractors' foreman.

TUNNELLING FROM LAKE SHAFT.

The work of tunnelling was carried on from this end in very much the same manner, and about as rapidly as it was on the first 2,000 feet from the land shaft. The average progress made was 9¾ feet a day till a point 2,290 feet from the lake shaft was reached, when operations in this direction ceased. When the work from the land shaft was within 100 feet of the same point, it was thought best to stop the masonry there and run a small timbered drift through to the east face to be certain as to how the lines were going to meet. The two faces were brought together

on the 30th of November, 1866, when it was found that the masonry at the east face was only about 7½ inches out of the line from the west end. The horizontal measurements were only three inches longer than was estimated by triangulation. This result, considering the great difficulty of getting a clear atmosphere in the tunnel, was deemed very good, and much better than was generally expected. The last of the masonry in the regular tunnel, when the two faces were brought together, was completed on the 6th of December, and a stone commemorative of the event placed there by the Mayor of the City in the presence of the City Council and Board of Public Works, both of which bodies, together with a number of citizens, passed from the shore through the tunnel to the crib, and then by a tug to the city on that day.

The ventilation of the east end of the tunnel was effected by means of six inch tin pipes connecting with the furnace of the hoisting engine. The pipes extended to the end of the masonry. Occasionally, ashes from the furnace would stop the ventilation, which would soon be discovered at the face.

GATE CHAMBER, CONNECTIONS AND COMPLETION.

In December the work of filling up the chambers was commenced, and also that of connecting the tunnel with the pumping wells. Much had been done previously towards constructing a gate chamber between the land shaft and the pumping wells. This was made 19⅓ feet exterior, and 16 feet interior diameter, and divided into five compartments, separated by walls 20 inches thick. The outer walls were first built on a boiler iron shoe or curb, and then sunk by excavating within. An old abandoned inlet gave a great deal of trouble by letting in water; and the boiler iron shoe, which was adopted for the sake of economy, proved more expensive in the end than a cast-iron one would have been. The foundations were on a bed of concrete, 24 inches thick, on which the footings of the exterior and division walls, all of brick, were built. Through the bottom of each division wall, there were left rectangular gate openings, 3 feet wide and 5 feet high. The tops of these openings are 23½

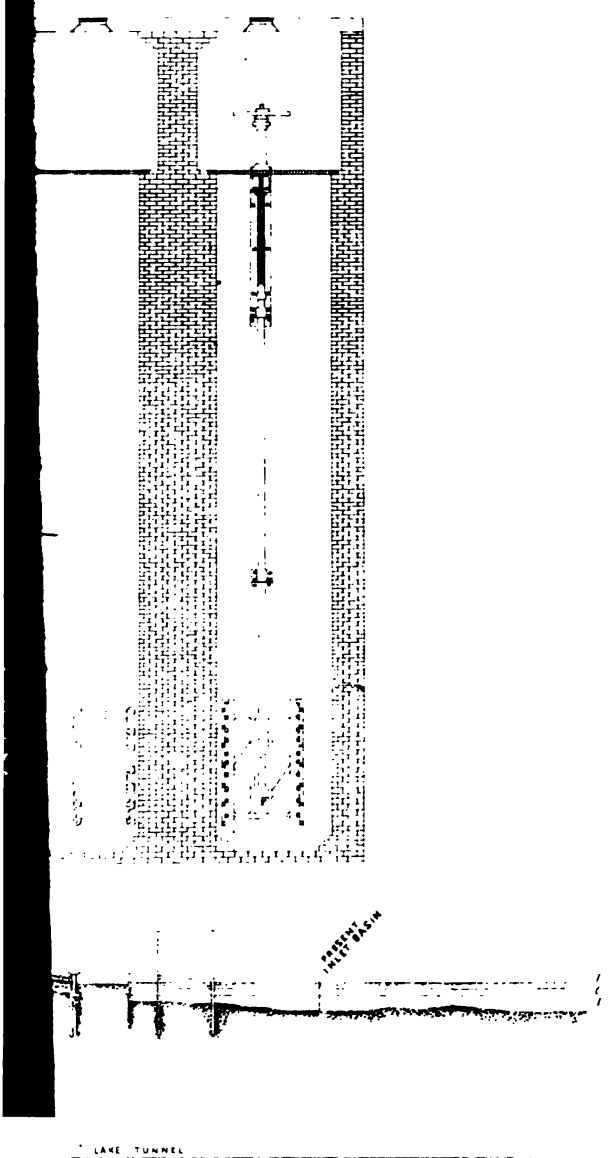
feet below low water in the lake. In each opening a cast
gate frame was built. The gates themselves are tapering.
frames were fitted with wedging grooves or ways projecting
yond the walls, just sufficient to free the gates when raised
lowered. It was hoped that the wedging grooves would all
the gates to be screwed down perfectly tight; but in pract
they have given more trouble than was anticipated, and it
believed now that in making future structures of the kind for t
city, if any should be required, it would be safer and better
put a gate on each side of the wall, so that the pressure of t
water could always be used to keep the gate tight. The gat
are operated by means of rods, stayed at intervals, and by scre
with hand-wheels at the top of the walls.

The connection between the land shaft and the gate chamb
was of precisely the same size and form as the main tunnel. Th
connections with the old and new pumping wells, and a parti
one with the provisional or south pumping well, as also abou
180 feet of a provisional connection with the lake shore, are a
4½ feet interior diameter, and were tunneled through soft cla
without any difficulty, except a little trouble in working unde
and through the piling beneath the old pumping well. Th
connection with the lake shore, or rather the old inlet basin, i
to be used in case it should ever be necessary to suspend th
supply through the main tunnel, either to examine, cleanse o
repair it.

A temporary connection between the land shaft and the mou
of the old inlet was made by means of a timbered drift throug
the clay, and a brick well 4 feet interior diameter and 30 fe
deep, provided with a curb built above the water on an iro
shoe, held together by iron rods, and sunk by means of the sam
dredging apparatus that was used for sinking the curb of th
new pumping well. Two wooden gates were left in the top
the curb, just below the surface of the water. A small area, e
closing the well and the inlet, were coffer-dammed around as fa
as necessary to cut them off from the flow of the lake whenev
desired.

The work of filling the chambers of the main tunnel, an
cleansing of that structure having been completed, water

CAL SECTION OF GATE CHAMBER.





first let into it on the 8th of March, 1867, when only the horizontal portion was filled, this precaution being taken to avoid too sudden a pressure on the masonry. By the morning of the 11th the shafts were filled to the level of the lake. For the purpose of ascertaining if any defective workmanship existed where cavities on the outside of the masonry had been filled in, the water was pumped out of the tunnel sufficiently to permit the Engineer and three representatives of the city press to go upwards of half way towards the land. Not a brick was observed to be out of its place or to have started. The party not being able to push their boat any further without great discomfort, returned, but were upset and left in total darkness about 600 feet from the lake shaft to which they walked. Had this accident occurred a mile out, it would have proved very serious if not fatal to most of the party, as the water was too cold to be endured long.

After the examination the tunnel was again filled, and on the 24th, about 4 p. m., the mouth of the old inlet was cut off from the lake. Immediately the pumps, which were not stopped at all, drew down the surface of the water at the mouth of the inlet upwards of a foot. For a moment, it seemed to some of the bystanders as if the tunnel would not perform its intended office, but the next instant the water began to bubble up beautiful and clear at the top of the well, and continued to do so till the temporary connection was no longer needed; when this most pleasing and unexpected feature of the works ceased to delight the public.

The formal celebration of the completion of the tunnel and introduction of pure lake water, by appropriate public ceremonies, took place March 25th, 1867. From that time to this there has been no cessation in the supply, except three times, when stoppages of a few hours by anchor ice occurred. The experience thus far gained in this respect is believed to be sufficient to shew how to prevent the recurrence of such accidents.

Careful observations have frequently been made to ascertain the head required to deliver given quantities of water through the tunnel, and it is found to exceed in capacity the original estimates. No indications whatever of internal injury to the structure have yet been observed.

ESTIMATE AND COST.

The original estimate of the probable cost of the work was $307,552. The actual cost, including all preliminary and other expenses of whatever nature, chargeable to the Lake Tunnel, up to April, 1867, was $457,844.95, made up of the following items, viz:

Engineering and Superintendence	$28,774.02
Printing and Advertising	375.13
Miscellaneous	6,250.03
Labor	2,096.20
Lumber	1,142.72
Piles	1,258.29
Hardware	53.85
Castings	597.55
Lake Shaft	12,629.86
(Gates and Gate Chambers of Lake Shaft, not included in contract of Dull & Gowen.)	
Dredging for Crib	1,500.00
Tugs, for Board and employes	6,718.17
Discount on Bonds	14,685.35
Opening Celebration	979.18
Dull & Gowen, (Contractors)	380,784.60
	$457,844.95

The original estimate was made when common labor was worth $1.25 a day, which up to that time had been considered a very high price. It was also made near the beginning of the war, before the difference between the values of gold and currency had much disturbed prices generally.

The original contract with Messrs. Dull & Gowen to construct the tunnel, was for $315,139. The final settlement with them was for $380,784.60, including $27,420 for extras on the tunnel proper, and $41,225.60 for extras on the shafts, crib and east and west extensions. In view of the prevalent feeling that the contractors must be very heavy losers by the work, a very liberal policy was pursued towards them in the settlement of extra

claims, yet it was finally proved by the books of the contractors, that their profits were not less than $50,000. It should be mentioned, however, that they claimed to have made great sacrifices in the sale of private property at the beginning of their operations, when the bankers who had promised to loan them money refused to keep their promise, on account of the reported hazardous nature of the work, and the probable ruin it would bring upon the contractors.

Very soon after the completion of the land shaft, the contractors applied to the City Council for an increase of price, and also for monthly payments of 85 per cent., not only upon all work actually done and in place, but upon materials delivered on the ground. The original contract allowed but 75 per cent. upon work actually in place, and nothing on materials delivered but not in their permanent place. The increase of price was not granted, but the rest of the contractors' request was, thus increasing largely their monthly payments, especially on account of the crib, on which they could otherwise have received nothing until after it was secured in its position. About a year before the final completion of the work, the contractors made a second application to the City Council for an increase of price, and an ordinance was passed granting them an increase on their contract of 60 per cent., or upwards of $189,000. This sum was considered very extravagant by the Board of Public Works, who had always felt, and continued to feel, that some allowance should be made, but also felt that the proper time to do it would be at the close of the work, when, by a frank statement of the contractors, and exhibit of their books, their actual loss, if any, could be ascertained. The Mayor vetoed the ordinance, and no other of this nature has since been passed, although the contractors did make their third application after the completion of the work, but the actual exhibit of their books caused the committee to report against the measure.

From the statements and books of the contractors, the actual cost of the work they did, deducting profits, was not more than $330,500. The crib and outer shaft cost $117,500; the land shaft cost $12,000; the west extension and connection with the gate chamber, no part of the original contract, cost $6,000, leaving

$195,000 as the cost of the tunnel proper. This being 10,567 feet long, made the cost to the contractors $18.45 per lineal foot. The original estimate of cost to the city was $13.54. The usual prices paid during the work, for common labor, $2.00; masons, $5.00, and engine men, $3.00 per day; for brick, $14.00 per thousand, and cement, $2.75 per cask of 300 lbs.

GENERAL SUPERINTENDENCE AND CONSULTATION.

On the part of the contractors, the general charge of the work was taken by Col. Gowen, who was rarely absent from the city. Mr. Dull was very seldom here, but was of much service to the firm by his counsels. These gentlemen persevered through great discouragements, not so much from the intrinsic difficulties of the work itself, as from injury to their credit by the reported risks they had to encounter; and from the appalling rise of gold, and consequently of prices, before they finished. Their final success was complete and very gratifying.

Under the Board of Public Works, the general charge was taken by the City Engineer, who visited the work daily at first, and afterwards several times a week. Erastus W. Smith, Esq., of New York, was consulting Engineer in all matters relating to the iron cylinders and gates. It was supposed at first that the shafts would have to be sunk by the pneumatic process. Mr. Smith believed, as soon as he was consulted on the subject, that this expense and trouble might be saved, and the event proved the correctness of his judgment. Mr. Smith aided the City Engineer in obtaining important advice from Mr. Webb, the eminent shipbuilder, and others, relative to the construction of the crib.

It should be said in this connection that, by the advice of Capt. Swift, before the construction of the crib was commenced, Col. Hartman Bache, U. S. engineer, was visited at his office in Philadelphia and consulted. He examined the plans of that structure and pronounced them entirely safe.

SCIENTIFIC AND OTHER ITEMS.

Connected with the construction of a work of this kind, there was necessarily very much of interest that cannot here be

epeated. The journals of the day published many articles elative to the tunnel, some purely descriptive, some speaking favorably of the enterprise, and many unfavorably. Since its completion, visitors to the city who reside hundreds, and in some cases thousands of miles away, frequently say, "we watched the progress of your work with great interest." The Academy of Sciences of this city had representatives, Drs. Jewell and Andrews, who made numerous observations relative to the geological developements by the excavations for the tunnel. The result of these has already been published in different forms, in Silliman's and other scientific journals.

Observations on sound were frequently made during the progress of the work. The first distinct notice of anything of this kind was when the tunnel had been made one hundred yards from the land shaft. Just above the tunnel is the breakwater inclosing the inlet basin. The outside of the breakwater consists of round piles, placed one to two feet apart. The waves could be distintcly heard in the tunnel below, striking those piles, through 60 feet of earth. The next observation was the passing of propellers and tugs, when the tunnel reached half a mile or more out. The different noises made by a vessel or engine passing overhead could be heard as distinctly through 30 to 40 feet of earth as on the surface of the water. It was considered a matter of much interest to determine how far sound could be heard through the clay. The miners thought it could not be more than 150 to 200 feet. In order to be certain, observations were made when the faces were 800 feet apart, and sounds of blows of iron on stone or iron in the clay, but not on the clay itself, could be heard with great distinctness. Whether the sounds passed through 800 feet of clay, or first through 30 feet of clay, then through 800 feet of water and then through 30 feet of clay, is a question—probably the latter.

It is believed that the accompanying drawings of different parts of the work will be understood without further explanation.

SEWERAGE.

A full statement of the operations of this department will be found in the following report of the Principal Assistant:

CHICAGO, March 31, 1869.

To E. S. CHESBROUGH, ESQ., *City Engineer:*

SIR: Herewith is presented a report for the year ending with date, of the extent and location of the sewers laid, of catch basins and manholes built, of the repairs and cleansing of the sewers, and of the permits issued for private drains to connect with them during the said year.

LENGTH IN FEET OF SEWERS BUILT TO APRIL 1, 1869.

Diameter in feet.	S. DIVISION.		W. DIVISION.		N. DIVISION.		TOTAL THREE DIVISIONS.			
	Previous to April 1, 1868.	From April 1, 1868, to April 1, '69.	Previous to April 1, 1868.	From April 1, 1868, to April 1, '69.	Previous to April 1, 1868.	From April 1, 1868, to April 1, '69.	Totals previous to April 1, 1868.	Totals April 1, 1868, to April 1, '69.	Total Sewers.	Average cost per ft. 1868, '69.
6	1,419		1,292		3,895		6,606		6,606	
5	4,267	721	30,855		13,756		48,878	721	49,599	7.47
4½	1,033		31,569		6,238		38,840		38,840	
4	4,317		22,252	1,806	7,053		33,622	1,806	35,428	5.64
3½			1,332	751			1,332	751	2,083	5.72
3	18,803	174	2,405	5,268	6,699	1,391	27,907	6,833	34,740	4.53
2½	44,007	1,358		575	3,544	2,326	47,551	4,259	51,810	3.51
2¼	6,359						6,359		6,359	
2	39,247	1,984	72,410	7,647	53,034	4,339	164,691	13,970	178,661	2.91
1	76,533	4,360	42,267	11,689	39,864	3,452	158,664	19,501	178,165	1.67
Totals.....	195,985	8,597	204,382	27,736	134,083	11,508	534,450	47,841	582,291	
Total by Div's	204,582		232,118		145,591		$101\frac{1170}{5280}$ Miles.	$9\frac{321}{5280}$ Miles.	$110\frac{1491}{5280}$ Miles.	

CATCH BASINS AND MANHOLES BUILT.

	Built from April 1, 1868 to April 1, 1869.			Previously Built.	Total.	Average Cost, 1868-9.
	S. Div.	W. Div.	N. Div.			
tch Basins...	160	222	98	2,652	3,132	69.01
nholes.....	45	165	83	3,582	3,875	20.00

There remains to be executed of the contracts of 1868, for wers in the West Division, about 4,300 feet of sub-main and pe sewers, at a cost of about $4,500.

Of the nine miles of sewers built in 1868, about 5,000 feet have en laid at the expense of private parties, and for which certifi- tes have been issued by the Board to the amount of $7,313.14, yable when the sewers shall be laid in the respective localities the work.

Over two miles of the sewers laid in 1868 were required to put in in advance of pavements ordered, either sewers on the reets to be paved or wing sewers across the same streets, to avoid e future disturbance of the pavement. This work it was ecessary to do without delay, and it was executed as required y the Board, at a cost of about $20,000.

Detailed Statement of Sewers built from April 1, 1868, to April 1, 1869.

SOUTH DIVISION.

LOCATION.			LENGTH OF SEWERS IN FEET.				
ON WHAT STREET.	FROM	TO	5 ft.	3 ft.	2½ ft.	2 ft.	1 ft.
South Halsted	River	Archer av.	721				
Archer av.	Halsted st.	Eastward		51			
East 18th	Dock face	Eastward		123			
Wabash av	26th st.	29th st.			1358		
East 18th	Grove st.	Wentworth av				540	
Archer av.	Halsted st.	Westward				58	
Grove	18th st.	North				61	
Wentworth av.	18th st.	North				54	
Calumet av.	22nd st.	21st st.				524	
23d street	E. line Cottage Grove	West line 21st st.				65	
Prairie av.	23rd st.	Southward				353	
Kankakee av.	22nd st.	Southward				40	
Wing sewers across Archer Avenue.	at Buddan st	Southward				75	
	at Arnold st.	Northward				79	
	at Clark st.	Northward				135	
	at Butterfield st.	North and south					130
	at Burnside st.	North					68
	at Finnell st.	Eastward					90
	at Wentworth av	Northward					80
	at Bushnell st.	South-eastward					61
24th street	Wabash av.	Eastward					240
23d "	Calumet av.	East and west					75
25th "	Prairie av.	East and west					74
Franklin	Alley Block 53	Alley B. 54 O. T.					83
Indiana av. wing sewers.	East and west at	23rd st					75
	" " " "	24th st					78
	" " " "	25th st					75
	" " " "	29th st					74
Michigan av. wing sewers.	" " " "	23rd st					68
	" " " "	24th st					68
	" " " "	25th st					68
	" " " "	29th st					68
Wabash av. wing sewers.	West at	28th st					34
	East and west at	23rd st					68
	West at	24th st					34
	East and west at	25th st					68
Prairie av.	Prairie av. sewer S. E.	to E. line Cot. Gr. av.					46
18th street	Wentworth av.	State st.					1200
Wing sewers on 18th st.	at Grove st.	Southward					68
	at Wentworth av.	Southward					49
	at Blackwell st	Southward					34
	at Arnold st.	North and south					104
	at Butterfield st	North and south					170
28th street	Across	Wabash av					68
29th "	Across	Wabash av					68
18th "	Indiana av	Eastward					145
20th "	Indiana av	Eastward					180
25th "	Wabash av	Eastward					250
21st "	Wabash av	Eastward					200
Butterfield	19th st	Southward					100
Totals			721	174	1358	1984	4360

WEST DIVISION.

LOCATION.			LENGTH OF SEWERS IN FEET.					
AT STREET.	FROM	TO	4 ft.	3½ ft.	3 ft.	2½ ft.	2 ft.	1 ft.
st	River	22nd st	1121					
	Lumber st	Canal st	685					
st	22nd st	Canalport av		751				
st	Canalport av	Luke st			752			
av	Putnam st	Milwaukee av			2658			
	River	Milwaukee av			1752			
st	Halsted st sewer	East and west			106			
st	Luke st	Evans st				575		
st	Evans st	16th st					546	
es st	Van Buren st	Harrison st					803	
on st	Fulton st	Carroll st					415	
	Randolph st	Lake st					463	
	Randolph st	Lake st					497	
st	Chicago av	Southward					73	
st	Chicago av	Cornelia st					692	
st	Washington st	Warren st					353	
t	Washington st	Park av					358	
	Carroll st	Depot place					310	
	Van Buren st	Sebor st					1193	
	Mather st	Ewing st					606	
	Forquar st	Dekoven st					610	
	Bunker st	12th st					356	
st	Taylor st	South					90	
es st	Van Buren st	South					63	
Court	Washington st	South					38	
Western av	Washington st	N. E and S. W.					105	
st	Adams st	North and south					76	
st	Blue Island av	West						76
	" " "	West						72
t	" " "	East						56
	" " "	East and west						103
st	" " "	East						62
st	" " "	North						100
	Halsted st	East						50
st	"	East						50
st	"	East and west						110
st	"	East and west						102
st	"	East						50
st	"	"						50
st	"	"						50
st	"	"						50
st	"	"						50
st	"	"						50
st	"	"						50
st	"	"						50
st	"	"						50
st	"	"						38
av	"	"						36
st	Desplaines st	West						57
n st	"	East and west						116
n st	"	West						55
	"	"						58
	"	"						55
av	"	"						58
st	"	"						58
t	"	"						64
er st	"	"						68
t	"	East and west						118
n st	Jefferson st	West						58
t	Jefferson st	East and west						117
	Clinton st	East and west						118
	Canal st	West						50
st	Adams st	North						40
st	Desplaines st	Green						1172

WEST DIVISION.—CONTINUED.

LOCATION.			LENGTH OF SEWERS IN FEET.					
ON WHAT STREET.	FROM	TO	4 ft.	3½ ft.	3 ft.	2½ ft.	2 ft.	1 ft.
Washington st	Bishop Court	South-Western av						240
Lake st	Sangamon st	Reuben st						4345
Canal st	Sebor st	Mather st						268
"	Ewing st	Forquer st						340
"	Dekoven st	Bunker st						237
Judd st	Canal st	Westward						101
Ann st	Washington st	Northward						154
Reuben st	Cornell st	Cornelia st						273
Warren st	Hoyne st	Eastward						216
"	"	Westward						120
Park av	Wood st	Westward						470
"	Robey st	East and west						740
Elizabeth st	Washington st	North						173
Halsted st	Sebor st	Mather st						223
"	Ewing st	Forquer st						200
Totals, West Div.			1806	751	5268	575	7647	11,0[illegible]

NORTH DIVISION.

LOCATION.			LENGTH OF SEWERS IN FEET.			
ON WHAT STREET.	FROM	TO	3 ft.	2½ ft.	2 ft.	1 ft.
Larrabee st	Chicago av	Oak st	1391			
Larrabee st	Oak st	Division st		1238		
Wells st	Division st	Granger st		371		
Wells st	North av	Carl st		717		
Chestnut st	Clark st	Dearborn st			379	
Wells st	Granger st	Goethe st			306	
Wells st	Carl st	Sigel st			923	
Carl st	Wells st	La Salle st			442	
Grant st	Clark st	"			411	
North av	Wells st	"			422	
Washington place	Clark st	Dearborn st			360	
Division st	Clybourn av	Larrabee st			944	
Granger st. wing	Wells st. sewer	Westward			38	
Sigel st. "	" "	"			38	
Schiller st. "	" "	"			38	
Goethe st. "	" "	"			38	
Schiller st. "	" "	Eastward				32
Goethe st. "	" "	"				38
Wells st	Sigel st	Goethe st				301
La Salle st	298 ft. N. of Schiller	North av				966
Dearborn st	Division st	Southward				140
Dearborn st	256 ft. N. of Burton pl.	Northward				260
Townsend st	Chicago av	White st				516
Wesson st	Chicago av	Northward				120
Franklin st	White st	Oak st				162
Chicago av	250 ft. E. of Pine st	Eastward				170
Totals, North Div.			1391	2326	4339	3432

REPAIRS OF SEWERS, CATCH BASINS, MANHOLES AND COVERS.

DIVISIONS.	Repairs of Sewers.		Repairs of Catch Basins & Manholes.		Repairs of Covers.		Totals Each Division.
	Ft. rep'd & relaid.	Cost.	No. rep'd.	Cost.	No. repd and restored	Cost.	
South Division.....	477	$819.57	143	$990.96		$1,564.55	$3,375.08
West Division.....	86	481.24	78	1,278.62		2,052.80	3,812.66
North Division.....	1385	2,041.86	106	1,029.34		1,028.14	4,099.34
Totals 3 Divisions.....	1948	3,342.67	327	3,298.92		4,645.49	$11,287.08

It will be observed that the repairs were most required in the South and North Divisions of the city, where the height of the ground over the sewers is, on the average, less than in the West Division. As the streets are filled up and the sewers properly protected from frost and traffic the occasion for repairs ceases.

It is recommended that all streets where there is not 2½ feet over the sewers should be filled up to that height, even if they are not to be filled to grade and paved.

CLEANSING OF SEWERS.

Method of Cleansing.	S. DIVISION.		W. DIVISION.		N. DIVISION.		TOTALS.		
	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Per 100 ft.
By Flushing.....	125,510	$3,274.38	91,300	$1,032.29	72,620	$1,837.89	289,430	$6,144.56	$2.12
By Chain Machine	50,570	4,892.72	35,290	4,084.41	18,330	3,439.77	104,190	12,416.90	11.90
Totals.....	176,080	$8,167.10	126,590	$5,116.70	90,950	5,277.66	393,620	18,561.46	ave'ge 4.71
Catch Basins Cleaned. ...	No. of 1108	2,970.44	No. of 1153	3,471.77	No. of 802	1,950.39	No. of 3,063	8,392.60	each, $2.74
Total cost of cleansing 3 Divisions.....		11,137.54		$8,588.47		$7,228.05	For 1867-8.	26,954.06 26,540.81	

It will be remarked that although the extent of the sewers has been much increased during the past year, the cost of cleansing is but very little more than that for the previous year. This is to be attributed to the increase of the extent of the paved streets,

from which very little enters the sewers that cannot be removed by flushing, which, it may be noticed, is much the cheapest method.

It should be borne in mind that in designing a sytem of sewers for a city as level as Chicago, it was intended that every precaution should be taken to exclude any substances that water would not carry; nor was it expected that they would be entirely self-cleansing. In fact, the experience of other cities in this country and in Europe, shows that the annual cost of cleansing ($245 per mile) is not an extraordinary one.

PRIVATE DRAINS.

Permits for private drains to be connected with the sewers have been issued as follows, during the year ending April 1, 1869:

Part of City.	6 inch Drains.	9 inch Drains.	12 inch Drains.	Total in 1868-9.	Total laid previously.	Total to April 1, 1869.
South Division, ..	750	21	5	776		
West Division,...	1379	34	6	1419		
North Division,..	1055	10	1	1066		
	3184	65	12	3261	12563	15824

All of the above drains have been inspected and platted upon the maps of the office.

Yours respectfully,

WILLIAM H. CLARKE,
Principal Ass't Engineer.

CONDITION OF THE RIVER.

No change in this respect can be reported. The increase of population, and of insalubrious manufactures along the river and branches must increase its offensive condition; but the effect of pumping at Bridgeport in dry seasons, on the one hand, and the restrictions upon the manufacturing establishments relative to their discharging into the river, by the Board of Health, on the other, prevent any increase of offensiveness from becoming manifest.

HARBOR.

Since the National Government has resumed not only the control but the actual execution of the works necessary for the preservation to the entrance of the harbor, all important expenditures on the part of the city for this purpose have ceased. Occasional soundings have been made, to show to Col. Wheeler, U. S. Engineer in charge of lake harbors, when and where dredging was required, which he has always been very willing to have done, as far as funds at his disposal would allow. Although the entire entrance to the harbor has not been as thoroughly dredged as was thought desirable, still, there has always been a channel sufficiently deep for vessels drawing the most water, provided they were towed out or in by skillful tugmasters. Occasionally, however, for the want of proper skill or care, or owing to unavoidable accidents while passing the bar, during high winds, vessels have occasionally got aground for awhile, and one or two have been driven on the south bar and wrecked.

The city is still required to keep up a light at the end of the north pier extension. It is hoped and believed that the Government will assume the expense and care of this before long.

WASHINGTON STREET RIVER TUNNEL.

This work having been completed under the efficient management of Messrs. J. K. Lake, Charles B. Farwell and A. A. McDonell, the contractors, a description of it, promised in the last annual report, will now be given.

PRELIMINARY STEPS.

Before giving an account of the various movements which led to the final construction of this work, it may be interesting to notice the increase of difficulties in crossing the river, and the various plans adopted or proposed for removing them.

The first bridges across the river were floating structures, and of course when closed could not allow the passage of vessels of any kind. The next kind of bridges were similar to the present ones, turning on their centres, but placed so low as scarcely to allow a canal boat to pass under them, and had to be opened for every tug or larger vessel. As the population and commerce of the city increased, the crossing of the river was more and more frequently obstructed by the passage of vessels; but the rights of navigation were considered paramount to all others on the river, and vessels could not be detained at all by the bridge, no matter what number of vehicles or individuals might be prevented from crossing. The first interference with the absolute rights of navigation was in requiring the tugs to lower their smoke-stacks when passing under the bridges that had been placed high enough. There was quite a rebellion against it by the tug masters for a day or two, but it soon ended, and there has been none since against so reasonable a regulation. This reduced the necessity of opening the bridges so often, and consequently afforded much relief. As the business of the city

increased, the obstruction to the land travel in crossing the riv was greatly increased, notwithstanding the raising of the ma important bridges high enough to let the tugs pass under them Occasionally the bridges would be kept open a half hour at a time, in some rare cases a whole hour. This state of things continued till nearly two years ago, when the present ordinance, which does not allow the land travel to be continuously stopped more than ten minutes at a time during the day, was passed. It has afforded great relief, but the inconvenience to the land traffic, though much diminished, is still a matter of serious and just complaint.

Early efforts were made to set on foot projects for constructing tunnels under the river, and thus avoiding the inconvenience of waiting at the bridges for the passage of vessels. In 1853, a company for the purpose having been formed, with the Hon. W. B. Ogden at its head, plans were proposed for such a work both in masonry and in iron. Among these plans were those of Messrs. Wm. Gooding, Ed. F. Tracy, and Thos. C. Clarke. Had the company constructed the work it was their intention to adopt Mr. Clarke's plan, which was for a wrought iron tunnel; because its estimated cost was less than that of a tunnel in masonry, and it could have been constructed without much interference with navigation.

Owing to the more general adoption of turn bridges about this time the great necessity for tunnels was removed and the probability of their yielding a satisfactory income much diminished. This led to the abandonment of the project for some years. From that time to the present, various plans have been proposed for tunneling under the river, mostly with wrought or cast iron tubes, to be sunk into trenches dredged for them. These were not sufficiently elaborated to show how they could be successfully united with the masonry or land portions, and were mostly by parties who had evidently not considered all the practical difficulties to be overcome.

On the 25th of April, 1864, the Chicago Tunnel Company, headed by Mr. S. S. Hayes, petitioned for the passage of ordinance authorizing them to construct tunnels under the Chica River at Franklin and Lake streets.

Pending the action of the City Council on the above ordinance, e Pittsburgh, Fort Wayne and Chicago Railway Company titioned for the construction of a *free* tunnel at Adams street, 'ering to subscribe $25,000 towards it, or $15,000 for one on y other street as far north as Washington street, provided lams street between Canal street and the river, should be cated.

November 14. S. B. Gookins and others petitioned for the ssage of an ordinance appropriating $100,000 for the con- ruction of a tunnel under the river at Washington street.

January 9, 1865. After various petitions and remonstrances had en considered, the City Council passed an ordinance intended authorize the Board of Public Works to construct a tunnel ıder the river at Washington street, appropriating for that ject $100,000 in city bonds, provided $100,000 more could be tained by subscription.

During the various movements of the City Council relative to river tunnel, the Board of Public Works frequently discussed e plan of such a work among themselves, and the President, r. Gindele, himself a civil engineer, prepared very finely ex- uted drawings of it. These were referred to the City Engineer, ith the request that he would shew them to such of his pro- ssional brethren as he might be able to consult, and then to ake such changes as he should think advisable. No changes the general outline of the plan were thought necessary. On count of possible danger from the dragging of anchors or the nking of heavily loaded vessels over the tunnel, the roof of the ver portion was considerably strengthened.

March 27. The specifications for the tunnel were read before ıe Board of Public Works by the City Engineer, discussed and ually approved. The Board then directed the Secretary to lvertise for bids for the work.

June 26. After bids had been received for the work, and the ty council had approved of its being let, it was discovered that ere was no legal ordinance authorizing the construction of the nnel.

July 27. A legal ordinance was passed, authorizing the con- uction of the work and appropriating $100,000 in bonds for it, ovided other parties should contribute $100,000 more.

September 4, 1865. The City Council directed the Board of Public Works to proceed at once, in accordance with the City Charter and the ordinance last passed, to award the contract for the construction of the tunnel to the lowest bidder.

The Board accepted the proposition of Mr. Jas. H. Moore, to build a tunnel under the river at Washington street for $200,000, on the conditions of the ordinance, and according to a plan of his own very similar in its outlines to the one adopted by the Board, but with less costly materials, in some of its parts, and with the omission of a considerable portion of counter-arching on each side of the river.

December 11. The Comptroller in answer to a previous inquiry by the City Council as to how much had been subscribed for the construction of the tunnel, and what was the prospect of the commencement and completion of "this necessary public improvement," reported that he did not know.

March 12, 1866. The subscription for Washington street having failed, the majority of a committee of twelve of the City Council reported in favor of constructing the tunnel at Adams, the subscription for which was still offered.

April 30. The Board of Public Works, in view of various petitions for tunnels on different streets and the non-commencement by Mr. Moore of the one on Washington street, in consequence of the failure of the subscription for $100,000, recommended the construction of a tunnel under the river at State street.

May 7. The City Council requested the Board of Public Works to furnish, at the next regular meeting, an ordinance for a tunnel under the river at Washington street.

May 21. The Board reported that having already recommended the construction of a tunnel at State street, they did not feel it to be for the interest of the city to commence the construction of another.

June 27. A committee of nine of the City Council, in reporting upon a proposition to build a tunnel at Franklin street, recommended that in view of all the circumstances of the case, including the failure of the citizens to subscribe, the refusal of the City Council to adopt Adams street, and the increasing demand by

the public for such a structure, a tunnel be constructed on Washington street. An ordinance carrying out this recommendation was passed, levying a tax of one mill on the dollar for the purpose, and repealing previous conflicting ordinances.

July 2. The ordinance last passed by the City Council was reconsidered.

July 17. After having received a petition for a tunnel on Clark street, the City Council passed a final and enabling ordinance and requested the Board of Public Works "to proceed as soon as possible" with the construction of the tunnel on Washington street.

August 23, 1866. Nineteen bids were received; ranging from about $247,000 to $430,000. The one accepted was that of Messrs. Stewart, Ludlam & Co., with whom a contract, dated August 31, to do the work for $271,646, was entered into. By this agreement the Contractors were to furnish all the materials and do all the work required to complete the tunnel. With regard to coffer-dam, bracing, &c., they were to be restricted in their choice of plan or materials only so far as the permanency of the work or the safety of the public might require.

CONSTRUCTION.

The contractors broke ground west of the river October 2, and east of the river October 11. They excavated to a depth of 37 feet just east of the river and removed a large portion of the earth as far as Market street, making a cut with perpendicular sides, which they supported with inferior bracing. West of the river they removed the earth from the upper portion of the cut between Clinton and West Water streets. They also drove most of the piles necessary for their east coffer-dam, and delivered about 4000 cubic yards of sand for the masonry, none of which, however, they ever built. December 23 a portion of the bracing east of the river gave way, but was soon repaired. Owing to the want of sufficient funds, the contractors were unable to carry on their work satisfactorily. The Board suspended payments, and on the 17th of May, 1867, the contractors abandoned the work, after having received up to that time $20,584.57. On the 14th of June the abandoned excavation east of the river caved in.

While Messrs. Stewart, Ludlam & Co. had the contract for the work, a very important change in the plan of the tunnel, first advocated by Mr. Letz in the Board, was discussed by both the Board and the City Council, and finally adopted. It consisted in prolonging the footways on each side of the river so as to admit of easy slopes instead of steps for two thirds of the ascent. This made it necessary to take the footway from the middle of the tunnel and put it on one side. A more exact description will be found below.

July 11. New plans and specifications having been prepared, and the work advertised for re-letting, the Board received nineteen bids, ranging from about $291,000 to $436,000. That of Mr. J. K. Lake was finally accepted, but in the contract, which was dated July 20, 1867, Messrs. Chas. B. Farwell and J. Clark were associated with him. The whole of the work specified, including all materials, labor, coffer-dam machinery, and whatever else might be necessary to complete the work according to the specifications, was to be done for $328,500. They were to receive monthly payments of 85 per cent. on account of work actually done and in place, but nothing on account of temporary work or materials delivered but not in place.

The contractors commenced operations July 25. They laid the first stone in the south retaining wall near Franklin street, August 13, and commenced the foundation of the main archway, east entrance, September 27, and put in the key-stone October 31. The corresponding work on the west side was about two weeks behind this. The masonry on the main arch east of the river was carried to near the middle of Market street, when, owing to the severity of the weather, operations were suspended on both sides of the river for the winter.

The operations of the contractors were carried on during the working season of 1867 with energy and without serious interruption except from the breaking of a water pipe on Canal Street, which caused some delay and extra expense in pumping. The earth was hoisted up and the stone, brick and other materials for the masonry lowered down by a steam derrick on each side of the river, moved from point to point as the work required. The bracing work consisted of 12×12 in. upright pine timber placed

generally about 12 feet apart on each side of the excavation. Behind those uprights were placed 4×6 in. pine lagging, generally close together, as the clay was found to swell and press in considerably on exposure. The uprights were held in position by horizontal 14×16 in. pine braces placed generally every 5 ft. above each other. At the ends of the braces cast iron screws and sockets were placed, by means of which they were easily tightened to support the banks, or loosened when the masonry was sufficiently advanced to admit of their removal.

Before the close of the season Mr. Clark withdrew from the contracting firm and Mr. A. A. McDonell was admitted.

About the first of April, 1868, the contractors, having prepared during the winter improved hoisting machinery, resumed operations and continued them with great energy, part of the time night as well as day, until the work was completed.

The contractors not being satisfied with the coffer-dam commenced by Messrs. Stewart, Ludlam & Co., constructed a new one on the east side of the river. This enclosed a rectangular space of 150 feet along the dock and 110 feet into the river. The dam itself was constructed in the usual manner with supporting and sheeting piles and wrought iron tie rods, with a clear space between the sheeting of 15 feet that was filled in with clay. Within the coffer-dam and on each side of the work there was a platform 25 feet wide, on which materials and hoisting machinery were placed.

A serious accident at the crossing of the railroad on West Water street occurred on the night of the 2d and 3d of September which caused considerable expense and delay to the contractors. It was owing to the yielding of the braces on the north side, during a heavy storm of rain, the whole difficulty being probably much increased by the breaking of a water pipe.

A leak in the east coffer-dam began on the 4th of September to be troublesome. It increased so rapidly, notwithstanding the most vigorous efforts to prevent it on the inside, as to drive the workmen out. After various mistaken surmises as to the cause of the leak through the dam, and consequently useless efforts at stopping it, the contractors drove a square pile across what they supposed might be its course, and stopped it immediately.

When the work within the easterly coffer-dam was finished, a bulkhead was built on top of the flagging over and near the end of the arch, connecting the two sides of the coffer-dam. Then the portions of the coffer-dam between the bulkhead and the east side of the river were removed and navigation restored. Then the west side coffer-dam was completed in very much the same manner as the other. Although the contractors placed clusters of piles firmly driven and tied around with strong chains they found it very difficult to keep passing vessels from injuring that structure. On the other hand, it cannot be denied that the coffer-dam was a nuisance to navigation.

Immediately after the commencement of operations in the west coffer-dam, and the removal of the clay from the face of the masonry built in the east coffer-dam, a crack, with a troublesome leakage through it, was discovered on the face of the south abutment of the foot-way. At first this was reported to be owing to the striking of an anchor over head; but besides being nearly 30 ft. from where any anchor could have struck, the crack was found to extend entirely across the whole mass of masonry in the tunnel, from north to south and from top to bottom. It was undoubtedly caused by the "creeping" of the clay towards the open space in the west coffer-dam. A similar crack occurred entirely west of the river, where the masonry had been suspended for some time in consequence of the accident at West Water street, but this not being under the river caused no leakage.

No serious leakage occurred in the west coffer-dam, but considerable difficulty was experienced from the occasional shocks of vessels against the north and south sides.

By the first day of January, the arches were all completely turned, and the whole work was in a state to enable the contractors to celebrate the day by taking the Mayor, City Council, Board of Public Works, Fire Department and others through it.

Much pains was taken to prevent leakage through the roof of this tunnel, by the use of Asphaltum prepared in the form of "Government Mastic" on Governor's Island New York, under the direction of the United States Engineers, and sold at cost by the War Department to the City. Owing to the necessity of using it in frosty weather, on a frequently frozen bed, it was

ossible to do it with that thoroughness that might have been ined under other circumstances. Portions of the archway e covered with a composition of coal tar, lime, &c., by Mr. J. Russell.

The amount of water which comes through and shows itself the upper arches and sides is not large in amount, but as it zes, the accumulations become in time sufficient, if not removed, obstruct the passage of vehicles through the tunnel. Besides usual method of seeking out and calking the leaks, one by , there is good reason to believe, from past experience, that leakage into this tunnel will of itself diminish more and more. is has been strikingly the case with the older portion of the rk, particularly on the east side.*

As the work was finally constructed the following is a

DESCRIPTION OF THE TUNNEL.

The tunnel is located with its centre line in the centre of Washton street. The eastern approach commences in the centre Franklin street, and the western terminates in the centre of nton street. The grade at Franklin street is 11.5 feet, and grade at Clinton street 13.5 feet above low water or city um line.

The bottom of the tunnel, or top of invert, in the centre of the er, is 32.4 feet below low water or city datum. The grades ween the ends of the approaches and the centre of the river uniform, except 101 feet each way (east and west) from the tre line of the river, in which there is a rise of 2.33 feet.

The tunnel under the river consists of three passage ways: the th one for foot passengers, and the other two for horses and icles drawn by horses.

The south passage way is 10.83 feet high between the bottom the upper arch and the top of the invert. The width of this

* At the date of going to press, December, 1869, the leakage in the footway has entirely stopped, and that in the drive ways so much reduced as to cause very or no annoyance.

The contractors have been settled with and paid, including extras, $395,664.48. total cost of this work to the City, including all preliminary expenses, superidence and contingencies, discount on bonds, damages and miscellaneous items, October 31, is $512,707.57.

passage way is 10 feet. The upper arch is struck from three centres, and the lower one, or invert, is a segment with a radius of ten feet. The side walls are perpendicular from the springing line of the upper arch, 4 feet down on each side to the footings, which project horizontally 6 inches, and then drop perpendicularly 12 inches, then project six inches, and then drop perpendicularly 12 inches to the invert.

The other passage ways are 11 feet wide, their inverts segments, with a radius of 10 feet, their height 15 feet and $\frac{3}{4}$ inch, their upper arches are struck from three centres. The perpendicular walls or piers between the passage ways are two feet thick, the north abutment is 5 feet, and the south abutment is 4 feet thick. The bottoms of the middle walls are 4 feet thick. The bottom of the north abutment is 6 feet thick to the top of the skew back and 5 feet at the footing. The bottom of the north pier is 4 feet thick, and the bottom of the south pier 6 feet thick; both are on a level with the north abutment. The bottom of the south abutment is 5 feet 1 inch thick, and 4 feet $2\frac{1}{4}$ inches higher than the bottom of the north abutment. The inverts and upper arches are 22 inches thick. The backs of the abutments continue upwards perpendicularly to 3 feet above the springing line of the upper arches. Then a sloping flagging course commences, and rises in 6 feet, horizontal, to a point 16 inches above the top of the outside of the upper arches. This flagging course, which is 10 inches thick, is laid entirely across from one side to the other of the tunnel in the river, between the new dock walls, and the top of this flagging forms the bed of the river at this place.

The section of the tunnel above described extends entirely across the river, a distance of 222 feet. At the new dock line on each side the flagging course over the top of the tunnel terminates.

Beginning at a point 111 feet each way from the centre line of the river, the section of the tunnel changes to a single opening or passage way, beginning here with a width of $23\frac{1}{3}$ feet, and diminishing to a width of $19\frac{1}{2}$ feet in a distance of 40 feet, or to points 151 feet on each side from the centre line of the river. At the points 111 feet each way from the centre line of the river, the centre of the passage-way begins with a height between the top of the invert and the bottom of the top arch of $20\frac{1}{2}$ feet.

The invert is 22 inches thick, and laid to a radius of 23.83 feet. The foundations of the abutments are 8 feet broad to a height of 5 feet 2 inches. The footing course above is 12 inches high and 7½ feet broad. The abutment then rises perpendicularly 7 feet, and is 7 feet thick. The upper arch is struck from three centres, with a total height above the springing lines at this point of 9 feet. The thickness of the upper arch is 34 inches on the sides, and 26 inches on top. The spandrels of the upper arch are backed with rubble masonry.

At the points 151 feet each way from the centre line of the river, the centre of the passage-way has a height of 18.83 feet between the top of the invert and the bottom of the upper arch. The invert, which to this point is 22 inches thick, is here reduced to 18 inches thick. The abutments are 7 feet 2 inches thick at the bottom, and for 3 feet 4 inches up, then 7 feet for 12 inches up, then 6½ feet for 12 inches up, and then 6 feet for 7 feet up. The upper arch is struck from three centres, with a total height above the springing line of 7¾ feet. The upper arch is 30 inches thick on the sides, and 22 inches on top. The spandrels are backed with rubble masonry. The section of the tunnel just above described extends from the point 151 feet east of the centre line of the river to a point 269¾ feet further east, or 420⅛ feet from the centre line of the river, and the remainder of the approach to the tunnel is open at the top, extending to the west line of Franklin street, a further distance of 273 feet, with side walls continuously diminishing in height and width of base. These walls are 25 feet high above the bottoms where they join the covered passage way, and 8 feet high on the west line of Franklin street, where they terminate. The bottom width of the walls is 4 feet at the west line of Franklin street, and 8¾ feet at the other end. The top width of each wall is everywhere 2 feet. The face of each wall is perpendicular, and the back is carried up in steps.

From the point 151 feet west of the centre line of the river to a point 362 feet further west, or 513 feet from the centre line of river, the section of the passage way is uniform throughout. At this point the uncovered passage way or approach to the tunnel begins and continues to the east line of Clinton street, with side

walls the same in all respects as those on the eastern approach to the tunnel, except in length, which is 320 feet.

There is a wall on the east side of the river at the dock line 50 feet, and one on the west side 80 feet long. These walls are of rubble masonry, 6½ feet thick at bottom and 3 feet thick at top, and are carried up 8 feet above low water. They are 200 feet apart to provide for prospective widening of the river.

At the eastern and western ends of the covered passage-way, there is a face wall extending up to the grade or surface of the street above, of cut stone, rock-faced ashlar, with chisel-dressed margins.

Through each of the middle walls or piers of the tunnel there are eleven openings, each 3 feet wide.

There is, under the north passage way and near the lowest part of the tunnel, a well 5 feet in diameter and 15 feet deep. This well is connected by means of a 4 feet brick sewer 100 feet long, with a well 5 feet in diameter and 13 feet deep. The wells are of brick masonry, with walls 8 inches thick, and inverts of the same thickness depressed 4 inches in the centre. The sewer and wells are built in concentric rings, 4 inches thick, with a half inch mortar joint between them. Outside of the sewer and wells, and entirely around them, there is a coating of cement mortar one inch thick. The spaces between the excavation and sewer and wells and above the sewer to the bottom of the invert are filled in with concrete. The character of the bricks, mortar and cement, and the work of laying them, are the same as employed for the tunnel. The well near the centre of the tunnel drains the foot-passenger way, through a nine inch hard-burnt clay pipe laid in cement. The well at the east end of the tunnel under the river section is further carried up to the surface of the street in the form of a shaft in the stone abutment, from which shaft the water that collects in the well is pumped up by machinery, constructed for that purpose, within the chamber built at the top of the shaft. The chamber is built of rubble masonry, and its interior dimensions is 12 feet by 10 feet.

Broken stone drains are built at every 20 feet, at the back of the abutments, and are carried through the abutments to 4 inch drain pipes, to receive the water that collects from the surface

above. These 4 inch drain pipes discharge into a 9 inch pipe sewer built or laid on the top of the inverts, and discharges into the well near the centre of the river.

Between the bottoms of the stone stairways, on each side of the river, in the foot passenger way, there is a pine plank pavement, 4 inches thick, laid lengthwise, and resting on joists 4×8 in., placed once in every 5 feet. The whole distance, including the stone platforms, being 811 lineal feet.

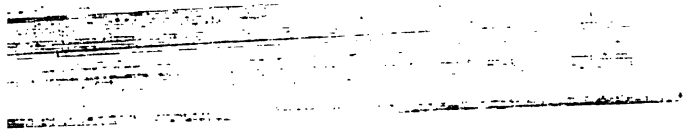
The open approaches to the tunnel on each side, and the passage-way for horses, are paved with wooden block pavement, (the whole distance being 1,608 lineal feet,) resting on lake shore sand.

The foundations everywhere under the tunnel, including all the covered archways, are of concrete, made by thoroughly mixing one measure of hydraulic cement with three measures of clean sharp sand in a dry state, and then mixing with the cement and sand water enough to make good mortar. Then with the mortar were incorporated five measures of broken stones, the whole mass being then worked till the broken stones were uniformly distributed throughout; the concrete was then laid in beds and rammed with wooden rammers.

The masonry is constructed of brick in the inverts, upper arches, piers above the inverts, and the faces of the abutments to an average thickness of 12 inches. It is constructed of stone in the bottoms of the piers and abutments, in the backs of the abutments, and in the spandrel backing of all the arches.

The inverts and upper arches are built in shells or parts of rings, 4 inches thick, with a floated joint of cement mortar between the shells of ½ an inch thick. The bricks in each course of the arches are stretchers, and laid so as to break joints with the bricks in the adjoining courses. The brick masonry in the face of the abutments is bonded into the stone masonry by projecting into it 8 inches further every other belt of 5 courses than the intermediate belts, thus making the brick work 8 inches and 16 inches thick in alternate belts.

The arches are covered with asphalt mastic mixed with five per cent. of prepared mineral bitumen, laid on a bed of lime mortar, then covered over with lime mortar five-eighths of an inch



OTHER TUNNELS UNDER THE RIVER.

Much time and labor have been spent in the preparation of plans and estimates for tunnels under the main river at State and LaSalle streets, and under the South Branch at Adams street; but as yet no conclusion has been arrived at with regard to them.

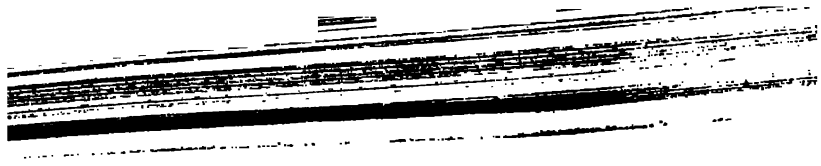
DOCK LINE SURVEY.

All labor and expense for this have ceased. Although the great cost of it seems to have been useless, as far as the main object was concerned, it is of frequent service in planning local improvements.

Respectfully submitted,

E. S. CHESBROUGH,

City Engineer.



FINANCIAL STATEMENT.

ıL BALANCE, LEDGER, BOARD OF PUBLIC WORKS, MARCH 31st, 1869.

WATER DEPARTMENT.

	Dr.	*Cr.*
›rks,	$2,908,362 47	
›rks Income,		$2,665,436 25
›rks, New Tower,	91,491 80	
ın Bonds, 6 %,		1,030,000 00
an Bonds, 7 %,		1,960,000 00
ın Interest,	1,100,558 03	
penses and Repairs,	950,072 55	
›n 6 % Water Loan Bonds,	42,638 10	
nd due City Treasurer,		12,390 49
›rks Stock,	34,003 20	
›rks Coal,	2,133 41	
›herman & Co., (Coupon account,)	76,320 00	
›rks Service Cocks,	339 74	
›e Account,	33,863 96	
Works, stock on hand,	6,382 93	
oundry and Machine Company,		2,877 85
ne House,	146,528 87	
n Street Service-pipe,	670 00	
›et Service-pipe,	1,567 96	
treet Service-pipe,	1,593 06	
ıd Avenue Service-pipe,	780 11	
et Service-pipe,	600 77	
reet Service-pipe,	221 04	
Street Service-pipe,	757 55	
on Street Service-pipe,	127 60	
›cond Street Service-pipe,	434 30	
reet Service-pipe,	836 94	
›enue Service-pipe,	141 38	
›ourt Service-pipe,	163 22	
treet Service-pipe,	115 60	
	$5,400,704 59	$5,400,704 59

WATER FUND.

STATEMENT of the cash receipts by the Board of Public Work from April 1st, 1868, to March 31st, 1869, inclusive, and detail statement of the cost of the various operations conducted the Board during the same time:

RECEIPTS.

Proceeds of 237 Bonds, including interest,	$237,283 48	
Water Tax collected,	420,656 84	
Received for tapping pipes,	14,226 60	
Received for letting on water,	806 80	
Received for setting meters,	2,387 07	
Received for sale of Hydrants, Materials and Labor,	2,599 03	
Pipe sold,	767 02	
Vouchers canceled,	948 53	
Coal sold,	342 75	
Plumbers' Licenses and Bonds,	66 00	
Tools sold,	11 80	
Over-remittance to Duncan, Sherman & Co. for int.,	100 00	
Stone sold,	140 00	
	$680,335 92	
Balance on hand, April 1st, 1868,	4,188 34	$684,524

EXPENDITURES.

ADDITION TO WATER WORKS.

DISTRIBUTING PIPES LAID.

		Cash Payment.	*True Cost.*
Cast iron pipe, 4, 6, 8 and 12 inch,	$147,982 34		
Trenching and backfilling,	24,748 68		
Testing and laying pipe,	19,879 93		
Tapers, caps, sleeves, bends and branches,	9,989 50		
Lead,	17,738 23		
Twelfth street syphon,	4,575 60		
Hauling pipe	2,692 76		
Brick,	1,002 60		
Lumber,	1,016 29		
Cement,	1,516 65		
Repairs of Tools,	150 85		
Plumbing,	470 07		
Steel,	155 49		
Gasket,	395 87		
Tools,	355 58		
Coal,	230 41		
Nails and spikes,	297 44		
Keeping horses,	447 00		
Advertising,	233 34		
Rosin,	3 00		
Freight on lumber,	66 00		
Royalty on hydrants,	60 00		
Drain pipe,	24 00		
Wood,	13 00		
Oil,	5 40		
Plugs,	69 70		
		$234,119 73	

ADD—

Pipe used previously paid for,	$18,501 49		
New hydrants put in,	5,299 47		
New stop-cocks put in,	1,729 35		
Tools, materials and labor from shops,	1,296 18		
Replacing taps,	5 85		
Proportion of discount on bonds sold,	3,590 36		
	$30,422 70		
Amounts carried forward,	$30,422 70	$234,119 73	

		Cash Payment.	*True Cost*
Amounts brought forward,.....	$30,422 70	$234,119 78	
DEDUCT—			
Labor and material for private parties,	2,870 60		
	27,552 10		
			$261,671 8
TWELFTH STREET WATER PIPE TUNNEL.			
Labor and construction,.....	$3,918 20		
Bolts and iron work,.....	756 32		
Tools,.....	264 47		
Lumber,.....	141 32		
Oil and can,.....	85 10		
Coal, ...	38 50		
Advertising,.....	38 76		
Nails,.....	32 73		
Miscellaneous cash items,.....	14 12		
		5,289 52	5,289 5
TEMPORARY CONNECTION WITH TUNNEL.			
Use of engine,.....	$108 00		
Use of dredge, ...	1,202 50		
Cement,.....	110 90		
		1,421 40	1,421 4
NEW ENGINE.			
G. W. Quintard, balance in full,.....		1,212 16	1,212 1
NEW SOUTH WELL.			
R. E. Moss, balance of contract,.....	$15,375 84		
Bolts and lead,.....	904 65		
Labor,.....	106 62		
Advertising,.....	34 88		
Coal, ...	94 24		
Lumber, ...	8 00		
		16,524 23	
ADD—			
Labor and material at shops,.....	$225 19		16,749 4
NEW INLET.			
Labor, ...	$2,185 03		
Use of dredge,.....	1,109 90		
Cement,.....	385 29		
Amounts carried forward,.	$3,680 22	$258,567 04	$286,344 8

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$3,680 22	$258,567 04	$286,314 33
Lumber,.....	87 07		
Brick, ...	234 00		
Castings,.....	72 44		
Miners' lamps, ...	8 40		
Rubber clothing,.....	17 00		
Coal, ...	271 04		
		4,370 17	
ADD—			
Labor and material from shop,.....	$1,743 05		
			6,113 22
NEW TOWER.			
Extra labor and material,.....	$719 62		
Paid on account of per centage,..	280 00		
		999 62	
DEDUCT—			
Stone sold,.....	$70 00		
			929 62
NEW SHOPS.			
Setting boilers,.....	$544 45		
Laying drain,.....	177 83		
Balance for carpenter work,.....	549 91		
Balance for painting and glazing, ...	137 00		
Masonry work,.....	49 56		
Labor,....	65 80		
Lumber,.....	16 50		
Plumbing,.....	222 15		
Gas fitting,.....	159 72		
		1,922 92	
ADD—			
Permanent tools, labor, gas, &c.,.....	$3,639 75		
Proportion of discount on bonds sold,.	54 74		
	$3,694 49		5,617 41
NEW ENGINE HOUSE.			
A. Wallbaum, on account of contract,...	$18,500 00		
J. Clark & Bro.," " " " ...	8,970 46		
W. W. Boyington, " " per centage,	1,200 00		
Gas fitting and fixtures,.....	61 97		
Inspector,.....	407 00		
Labor,.....	325 59		
		29,465 02	
Amounts carried forward,.....		$295,324 77	$299,004 58

		Cash Payment.	*True Cost*
Amounts brought forward,.....		$295,324 77	$299,004
ADD—			
Tearing down old building, cleaning bricks, &c.,.....	$2,004 32		
Resetting and refitting old boiler,.....	3,400 71		
Proportion of discount on bonds sold,.	479 22		
	$5,884 25		
DEDUCT—			
Stone sold,.....	$70 00		
	$5,814 25		35,279
LAKE TUNNEL EXTENSION.			
Labor,.....	$1,025 37		
Boring rods, &c.,.....	146 51		
Rope,.....	15 92		
		1,187 80	1,187
Total addition to the Water Works,.....		$296,512 57	$335,471

ORKING EXPENSES AND REPAIRS.

EXPENSES AT PUMPING WORKS.

	Cash Payment.	*True Cost.*
y of engineer and three assistants, ..	$7,002 04	
r,	19,484 54	
$\frac{8}{2000}$ tons coal, (cash paid,)	48,947 71	
for steaming boilers,	274 46	
for work shop,	952 10	
ngs,	9,328 26	
aint and brushes,	1,463 96	
er and brass,	2,013 46	
and steel,	722 20	
e keeping,	411 69	
and couplings,	228 35	
ing,	237 67	
felt,	257 86	
irs of boilers, etc.,	312 68	
ng boilers,	204 85	
ing lot,	108 00	
,	349 79	
wagon,	225 00	
lathe,	875 00	
nses to New York,	116 60	
	720 92	
ng,	204 97	
,	597 72	
et,	275 06	
, iron, nuts, etc.,	396 41	
nery,	38 58	
ght on waste,	24 85	
e,	61 50	
et lamps,	3 00	
pans and drainer,	27 00	
	18 45	
urners,	6 00	
ting,	50 00	
Amounts carried forward,	$95,940 68	

		Cash Payment.	True Co
Amounts brought forward,	$95,940 68		
Furniture,	17 48		
Polish,	2 00		
Nails,	2 00		
Soap,	45 15		
Map of Chicago,	12 00		
Screw hinges,	12 18		
Harness and blankets,	54 00		
Miscellaneous cash items,	67 25		
		$96,152 74	

ADD—

Coal used, previously paid for,	$1,151 15	

DEDUCT—

Hydrants, stop cocks and labor used for and charged to extension repairs, and other water accounts,	$31,256 81		
Buggy, charged stock account,	225 00		
Labor on coal, charged coal account,	864 19		
Labor at shop,	230 52	32,576 52	
		$31,425 37	$64,727

LAKE TUNNEL.

Use of tugs,	$1,477 25		
Lighthouse keeper,	907 50		
One fog bell,	506 30		
Labor,	415 32		
Carpenter work on crib,	1,205 19		
Oil, wicks and can,	226 50		
Iron and steel,	25 51		
Tools,	27 00		
Lumber,	94 75		
One signal halyard,	4 00		
Nails and spikes,	44 00		
Coal,	78 42		
Use of steam pump,	84 00		
Freight on steam pump,	50 00		
		5,145 74	
Amounts carried forward,		$101,298 48	$64,727

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$101,298 48	$64,727 37
›r at shops,.....	$66 55		5,212 29
IRS OF PIPES,' HYDRANTS, STOP COCKS, AND MISCELLANEOUS OPERATING EXPENSES.			
.....	$19,433 26		
nt inspectors,.....	5,460 00		
ılk, south reservoir,.....	207 46		
vall on Adams street,.....	589 02		
:r	975 03		
keeping,.....	482 91		
;es caused by leak,.....	29 00		
'es,....	140 00		
ng hydrants,...	75 00		
ing,.....	122 64		
.....	78 44		
.....	176 80		
›g off water,.....	108 00		
carriage, ...	1 67		
are,....	12 68		
ge.....	22 00		
.....	4 82		
....	55 00		
t,.....	52 21		
,.....	40 00		
; on water,.....	1 50		
f Chicago, ...	4 00		
f judgment,.....	50 10		
badges,.....	9 34		
.....	8 00		
laneous cash items,.....	50		
sed,...	200 00	28,339 38	
rants used,.....	$2,377 69		
cocks used,..	257 26		
:hing engine house, reservoirs and s,...	796 00		
›r and material from shop,.....	1,091 21		
reciation in meters,.....	3,179 80		
	$7,701 96		
Amounts carried forward,.....	$7,701 96	$129,637 86	$69,939 66

			Cash Payment.	*True*
Amounts brought forward,.....		$7,701 96	$129,637 86	$69,9
DEDUCT—				
Received for shutting off and letting on water,'.....	$870 21			
Labor, ...	94 38			
Pipe sold,.....	48 12			
Vouchers canceled,.....	615 03	1,627 74		
		$6,074 22		
				34,4

WATER METERS.

155 meters,.....		$10,973 25		
Freight on meters,.....		458 69		
Machinist,.....		1,200 00		
Meter connections, and labor on same,....		1,052 30		
Valves, nipples, etc.,.....		996 59		
One horse, ...		175 00		
Lumber,.....		350 90		
Horse keeping,.....		203 10		
Lead,.....		47 19		
Tools,.....		71 36		
Pipe,.....		67 20		
Nails,.....		54 75		
Printing meter bills,.....		26 50		
Twelve dials,.....		15 00		
50 feet hose,.....		22 00		
Two buffalo robes,.....		20 00		
Castings,.....		19 05		
Drayage,.....		4 00		
Plumbing,.....		26 23		
Glazing,.....		5 50		
Sawdust, ...		10 00		
Miscellaneous cash items,.....		66 79		
			15,865 40	
DEDUCT—				
Valuation of meters, charged stock,....		$10,465 00		
Received for setting meters, and 1 meter sold,.....		2,387 07		
		$12,852 07		
Amounts carried forward,.....		$12,852 07	$145,503 26	$104,35

		Cash Payment.	*True Cost.*
mounts brought forward, ...	$12,852 07	$145,503 26	$104,353 26
and material at shop,.....	38 56		
	$12,813 51		3,051 89

OFFICE EXPENSES AND SALARIES.

of commissioners,.....	$ 3,000 00		
of secretary and assistant,.....	1,399 96		
f city engineer, ...	1,500 00		
f bookkeeper and assistant,.....	1,066 64		
of clerks,.....	4,183 44		
f superintendent,.....	933 32		
f assistant engineer,.....	600 00		
of draughtsmen,.....	2,813 44		
of messenger, janitor,& watchman,	764 00		
ssessor and assistant,.....	3,398 18		
ollectors,.....	4,667 74		
nt,.....	2,250 00		
ry,.....	905 26		
sixth annual report, ...	164 78		
ent books,.....	135 00		
sing,.....	263 70		
re,.....	216 80		
,.....	829 22		
..	555 43		
.....	225 37		
e and postage stamps,.....	146 12		
g office,.....	121 71		
ing in front of office,.....	14 67		
g awnings,.....	2 83		
, ...	40 52		
g and Glazing,.....	13 66		
re,.....	83 73		
r,.....	50 00		
.....	26 85		
on bonds,.....	60 00		
g,.....	21 15		
Chicago,.....	20 00		
g materials,.....	18 90		
.....	2 00		
ing,.....	3 75		
.....	92 66		
neous cash items,.....	97 55		
		30,688 48	
mounts carried forward,.....	$30,688 48	$176,191 74	$107,405 15

		Cash Payment.	*True Cst.*
Amounts brought forward,.....	$30,688 48	$176,191 74	$107,405 15
DEDUCT—			
Received from plumbers' licenses, ...	$69 75		
Amount deposited by comptroller,.	91 00		
	$160 75		30,527 73
Total expenses and repairs,.....		$176,191 74	$137,932 88

WATER LOAN INTEREST.

		Cash Payment.	*True Cost.*
Interest on Water Loan bonds, July 1st, 1868, and January 1st, 1869,	$144,520 00		
Coupons paid by city treasurer,	27,460 00		
Commission to Duncan, Sherman & Co.	361 30		
Advertising,	11 96		
		$172,353 26	
ADD—			
Discount on 6 % Water Bonds,	$3,999 36		
DEDUCT—			
Accrued interest on bonds sold,	$4,391 00		
Over-remittance to D., S. & Co.,	200 00		
	4,591 00		
	$591 64		$171,761 62
Total Water Loan Interest,		$172,353 26	$171,761 62

MISCELLANEOUS EXPENSES.

SERVICE COCKS.

		Cash Payment.	*True C*
Services of tappers,	$2,748 00		
Taps purchased,	5,767 40		
Tapping boxes,	2,063 75		
Permit clerk,	600 00		
Inspector,	912 00		
Horse keeping,	481 84		
Two horses purchased,	425 00		
Horse shoeing,	113 69		
Repairing wagons,	102 45		
Advertising,	182 84		
Rubber clothing,	20 25		
Blank books,	56 50		
Plumbing,	13 62		
Assistant permit clerk,	126 92		
Tools,	24 38		
Lumber,	92 70		
Printing,	64 50		
Repairing harness,	53 95		
Miscellaneous cash items,	5 05		
		$13,854 34	
ADD—			
Labor and material at shops,	$573 21		
Service cocks previously paid for,	1,040 71		
	$1,613 92		
DEDUCT—			
Two horses charged stock account,	$425 00		
Cash receipts for tapping,	14,221 57		
Service cocks sold,	450 95		
Inspecting,	31 00		
	15,128,52		
	$13,514 60		
Amounts carried forward,		$13,854 34	

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$13,854 84	
WATER WORKS STOCK.			
One buggy,.....	75 00		
One scale for pipe yard, ...	30 00		
		105 00	105 00
COAL ACCOUNT.			
Coal purchased and not used,.....		2,472 41	
DEDUCT—			
Amount received from coal sold,.....	$339 00		2,133 41
WATER PIPE ACCOUNT.			
Pipe purchased and not used,.....		27,687 60	
ADD—			
Pipe previously paid for,.....	3,305 81		
Pipe used and not yet paid for, ...	2,871 05		
	$6,176 36		33,863 96
INCOME.			
Tax overpaid refunded,.....		109 90	109 90
VAN BUREN STREET SERVICE PIPE.			
M. Greenebaum, laying pipe,.....		554 80	
ADD—			
32 taps used,.....	115 20		670 00
CLARK STREET SERVICE PIPE.			
J. Hogan, laying pipe,.....		1,801 56	
ADD—			
74 taps used,.....	266 40		1,567 96
HALSTED STREET SERVICE PIPE.			
A. W. Raffin, laying pipe,.....		1,593 06	1,593 06
BLUE ISLAND AVENUE SERVICE PIPE.			
A. W. Raffin, laying pipe, ...		780 11	780 11
Amounts carried forward,.....		$48,458 78	$40,823 40

	Cash Payment.	*True*
Amounts brought forward,.....	$48,458 78	$40,82
STATE STREET SERVICE PIPE.		
A. W. Raffin, laying pipe,.....	600 77	60
ADAMS STREET SERVICE PIPE.		
Bassett & Patterson, laying pipe,.....	221 04	22
MICHIGAN STREET SERVICE PIPE.		
J. Schuster, laying pipe, ...	757 55	757
WASHINGTON STREET SERVICE PIPE.		
Jos. Hogan, laying pipe,.....	127 60	127
TWENTY-SECOND STREET SERVICE PIPE.		
J. Hogan, laying pipe, ...	434 80	43
ADAMS STREET SERVICE PIPE.		
J. Scanlan, laying pipe,.....	836 94	83
HARMON COURT SERVICE PIPE.		
Jos. Hogan, laying pipe,.....	163 22	163
TWELFTH STREET SERVICE PIPE.		
Jos. Hogan, laying pipe,.....	115 60	115
PRAIRIE AVENUE SERVICE PIPE.		
Jos. Hogan, laying pipe,.....	141 38	141
Total miscellaneous expenses,.....	51,857 18	44,221
Total addition to the Water Works, brought forward,.....	296,512 57	335,571
Water Works expense and repairs, brought forward,.....	176,191 74	137,933
Water loan interest, brought forward,.....	172,353 26	171,761
	$696,914 75	$689,397

Total cash expenditures,.....	$696,914 75	
Balance due city treasurer, April 1st, '69,	12,390 49	
	$684,524 26	
Total receipts for the year, including balance of April 1st, 1868,.....	$684,524 26	

SEWERAGE DEPARTMENT.

IAL BALANCE, LEDGER, BOARD OF PUBLIC WOKS, MARCH 31st, 1869.

	Dr.	*Cr.*
, North Division,	$459,504 44	
, South Division,	594,281 44	
, West Division,	905,896 15	
ellers,		$610 50
ent,		259 00
hinney,		320 05
ayes,		1,069 50
W. Borden,		1,831 20
a Giles,		331 72
ge Brick,	8,577 75	
Messenger,		339 87
owen,		115 98
igelow,		354 10
slough improvement,	72 14	
er Lynd, treasurer sewerage commissioners,	109,245 48	
ge loan bonds, 6 %,		87,000 00
ge loan bonds, 7 %,		1,753,000 00
ge loan bonds canceled,		160,000 00
ge sinking fund,		98,515 81
ge sinking fund mortgages,	5,922 10	
it on sewerage loan bonds,	19,266 71	
ge loan interest account,		14,478 64
& Brand,		626 37
ge pipe,	9,258 66	
ge stock,	3,677 90	
an Exchange National Bank,	3,135 00	
Drains,		3,189 03
Coughlin,	1,561 51	
mounts carried forward,	$2,120,399 28	$2,122,094 77

	Dr.	*Cr.*
Amounts brought forward,	$2,120,399 28	$2,122,094
Michigan street drains,	471 80	
West Van Buren street drains,	792 04	
North Clark street drains,	2,205 17	
Galena and Chicago Union R. R. Co.,		382
Sewerage fund due city treasurer,		68,126
E. ½ lot 3, block 4, Kinzie's addition,	68 50	
S. ½ lot 5, block 123, school section addition,	22 18	
Z. Cobb, agent, S. 80 feet, W. ½ lot 7, B. 36, O. T.,	31 53	
Pittsburgh and Ft. Wayne R. R. Co.,		616
Chicago, Burlington and Quincy R. R. Co.,		6,744
Owners of lots 1, 2, 7 and 8, B. 5, J. R. & S. add.,	94 54	
Cement account,	157 86	
North State street drains,	331 76	
West Adams street drains,	256 00	
Sewerage sinking fund in hands of the treasurer,	32,938 47	
Sewerage man hole and catch basin covers,	3,935 00	
Sewerage expense and repairs,	16,036 19	
West Madison street drains,	110 66	
South Wells street drains,	405 96	
Washington street drains,	8 05	
La Salle street drains,	456 32	
Ezra B. Lincoln,		246
Thomas Wilce,		1,469
Charles Busby,		838
David R. Dyche,		243
Griswold and Sherman streets drains,	541 50	
Filling north Market street,	1,205 70	
Filling Harrison, Polk and Taylor streets,	312 80	
Michigan avenue drains,	4,500 99	
Chicago avenue drains,	350 60	
Milwaukee avenue drains,	1,494 74	
Market street drains,	826 61	
Halsted street drains,	1,333 00	
Clark street drains,	1,921 57	
Indiana avenue drains,	2,389 80	
Kinzie street drains,	609 00	
Archer avenue drains,	563 22	
Sangamon street drains,	511 28	
Blue Island avenue drains,	712 00	
Franklin street drains,	232 40	
Huron street drains,	70 68	
Harmon court drains,	104 50	
Adams street drains,	394 00	
Amounts carried forward,	$2,196,795 70	$2,200,862

	Dr.	*Cr.*
Amounts brought forward,	$2,196,795 70	$2,200,862 10
Monroe street drains,	652 16	
John Duffy, contractor,		2,899 60
Ohio street drains,	551 38	
Prairie avenue drains,	142 10	
Twenty-second street drains,	343 36	
Desplaines street drains,	788 90	
Pine street drains,	196 84	
Canal street drains,	629 42	
Clinton street drains,	410 82	
North Dearborn street drains,	1,937 31	
Twelfth street drains,	111 15	
West Lake street drains,	1,201 56	
	$2,203,761 70	$2,203,761 70

SEWERAGE FUND.

Statement of the cash receipts by the Board of Public Works, from April 1st, 1868, to March 31st, 1869, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time.

RECEIPTS.

Proceeds of 141 seven per cent. bonds sold, including interest,	$140,109 89	
Received from city account of sewerage tax, 1868,	252,405 74	
Temporary loan,	30,000 00	
Pipe sold,	716 35	
House drain permits issued,	11,208 10	
Sundry persons for constructing sewers,	1,541 27	
Constructing drains,	420 92	
Re-laying drains,	77 80	
Covers sold,	127 00	
Brick sold,	8 40	
Cement sold,	5 62	
Freight on lumber refunded,	22 00	
Received for cleaning sewers,	35 00	
Received for repairs of sewers,	160 96	
Labor,	359 87	
Material sold,	17 50	
Received for drain layers' licenses,	22 00	
	$437,238 42	
Balance due city treasurer, April 1st, 1869,	68,126 21	
		$505,364 6

EXPENDITURES.

SEWERS, NORTH DIVISION.

	Cash Payment.	*True Cost.*
Services of engineers,	$ 1,769 96	
Inspectors and rod men,	1,081 75	
Labor,	7,709 33	
Amounts carried forward,	$10,561 04	

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$10,561 04		
Cement used,.....	1,211 59		
Filling north Market street, ...	516 00		
Tools,.....	16 59		
Horse keeping,.....	92 55		
Car fares, ...	50 44		
Lumber, ...	78 60		
Oil,.....	8 85		
Blacksmith work,.....	27 67		
Blank books,.....	10 00		
Plumbing,.....	28 17		
Water used,.....	4 57		
		12,606 07	
ADD—			
Filling N. Dearborn street,. $ 72 00			
Depreciation in tools, ... 180 22			
Pipe used,..... 2,980 28			
Brick used,..... 2,006 29			
Covers used,..... 860 00			
Proportion of dis. on bonds, 932 16			
Expense sewer, Larrabee st., 9,034 95			
" " Wells st.,...10,650 21			
" " Chestnut st., 1,097 48			
" " Carl st.,.... 2,001 27			
" " Grant st.,... 1,501 18			
" " North ave.,. 1,869 40			
" " Wash. pl.,.. 868 76			
" " Division st.,. 2,479 94			
" " Oak st.,..... 85 50			
" " Schiller st.,. 199 00			
" " Goethe st.,.. 205 00			
" " Granger st.,. 95 00			
" " Sigel st.,.... 95 00			
DEDUCT—	37,213 64		$49,747 71
Amount received for filling N. Dearborn st.,.....	72 00		
	$37,141 64		
SEWERS, SOUTH DIVISION.			
Services of engineers,.....	$ 2,664 97		
Inspectors and rod men,.....	1,365 50		
Amounts carried forward...	$4,030 47	$12,606 07	$49,747 71

		Cash Payment.	In
Amounts brought forward,.....	$4,030 47	$12,606 07	$49
Labor,.....	10,936 14		
Cement used,.....	1,590 61		
Constructing sewer on Calumet avenue,.	1,353 50		
Constructing sewer on 25th street, ...	162 50		
Lumber, ...	203 81		
Car fares,.....	95 39		
Horse keeping,.....	92 55		
Paving, ...	10 00		
Tools,.....	14 53		
Rent of stable,.....	31 26		
Plumbing, ...	13 11		
Repairing tools,.....	6 56		
Oil,.....	8 85		
Blacksmith work,.....	27 66		
One tap broken,.....	2 50		
Field book,.....	10 00		
Water used,.....	4 58		
		18,594 02	

ADD—

Depreciation in tools,.....	$ 180 23	
Pipe used,.....	2,435 38	
Brick used,.....	3,117 47	
Covers used,.....	1,220 00	
Proportion of disc. on bonds,.	802 44	
Sewer on 18th street,.....	838 20	
Expense sewer, S. Halsted st.,	5,679 51	
" " Eighteenth st.	3,349 36	
" " Wabash ave.,	5,910 48	
" " Calumet ave.,	343 57	
" " Prairie ave.,.	19 00	
" " Wentw'rth av	28 50	
" " Purple st.,...	23 75	
	23,947 89	

DEDUCT—

Amount rec'd for labor and material,	145 90	
	$23,801 99	

SEWERS, WEST DIVISION.

Services as engineers,.....	$ 1,900 07		
Inspectors and rod men,.....	1,883 50		
Amounts carriad forward,.....	$3,783 57	$31,200 09	$9

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$ 3,783 57	$31,200 09	$92,143 72
or,.....	16,388 34		
istruction of sewers, ...	1,641 75		
ing on Fourth street,.....	299 48		
nent,.....	2,727 62		
ling on Jefferson street,.....	34 50		
ling on Polk street,.....	66 00		
ols,.....	12 29		
fares,.....	59 01		
pairing tools,.....	6 56		
rse keeping,.....	113 91		
nber, ...	219 26		
.....	8 85		
clothing, etc.,.....	12 00		
cksmith work,.....	32 67		
mbing,.....	63 58		
ld Book,.....	10 00		
ter used,.....	4 58		
		25,483 97	
D—			
Depreciation in tools,.....	$ 180 22		
Pipe used,.....	5,521 67		
Brick used,.....	5,270 67		
Covers used,.....	1,789 00		
Construction of sewers for private parties,.....	6,184 89		
Proportion of disc. on bonds,	1,988 10		
Expense sewer, Halsted st.,..	18,035 53		
" " Chicago ave.,	11,708 74		
" " Erie st.,.....	7,639 17		
" " Canal st.,....	5,977 02		
" " Desplaines st.	1,530 99		
" " Ann st.,.....	1,246 32		
" " Ada st.,.....	1,369 28		
" " Lake st.,.....	7,644 60		
" " Reuben st.,..	38 00		
" " Morgan st.,..	23 75		
" " Rucker st.,...	19 00		
" " Sangamon st.,	402 55		
" " Eighteenth st.	3,347 45		
	79,916 95		
Amounts carried forward,.....	$79,916 95	$56,684 06	$92,143 72

		Cash Payment.	True
Amounts brought forward,.....	$79,916 95	$56,684 06	$92,14
DEDUCT—			
Amount received for labor,.....	391 72		
	$79,525 23		105,00
CLEANSING SEWERS, NORTH DIVISION.			
Labor, ...	$ 6,862 69		
Repairs of wagons and tools,.....	107 71		
Water used for flushing, ...	42 09		
Blacksmith work,.....	30 75		
Oil, ...	5 59		
Tools, ...	5 48		
One pair of boots,.....	2 66		
Salt,.....	86		
		7,057 83	
ADD—			
Depreciation in tools,.....	180 22		
DEDUCT—			
Amount received for labor,.....	10 00		
	$170 22		7,22
CLEANSING SEWERS, SOUTH DIVISION.			
Labor, ...	$10,783 24		
Repairing wagons and tools, ...	107 71		
Blacksmith work,.....	30 75		
Water used for flushing, ...	42 09		
Tools, ...	17 88		
Oil, ...	5 60		
Rubber boots,.....	9 17		
Salt, ...	87		
		10,997 31	
ADD—			
Depreciation in tools,.....	180 23		
DEDUCT—			
Amount received for labor, ...	40 00		
	$140 23		11,13
Amounts carried forward,.....		$74,739 20	$215,51

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$74,739 20	$215,518 51
CLEANSING SEWERS, WEST DIVISION			
r,.....	$8,199 56		
iring wagons and tools,.....	107 72		
r used in flushing,.....	42 09		
:smith work,...	30 75		
.....	19 11		
,.....	5 48		
er boots,.....	2 67		
.....	87		
		8,408 25	
–			
preciation in tools,.....	180 22		8,588 47
REPAIRS OF SEWERS, NORTH DIVISION.			
r,.....	$3,034 83		
:nt,.....	316 62		
iring tools and wagon,.....	13 57		
:smith work,.....	4 10		
		3,369 12	
–			
preciation in tools,..... $90 11			
ck used,..... 342 22			
rers used,..... 300 14	732 47		
:CT—			
nent sold,.....	2 25		
	730 22		4,099 84
REPAIRS OF SEWERS, SOUTH DIVISION.			
r,.....	$2,203 56		
:nt,.....	226 06		
iring wagon and tools,...	13 56		
:smith work.....	4 10		
		2,447 28	
–			
preciation in tools,..... $ 90 11			
:k used,..... 355 27			
rers used,..... ... 492 42			
	937 80		
Amounts carried forward,.....	$ 937 80	$88,963 85	$228,206 32

			Cash Payment.	T
Amounts brought forward,.....	$ 937 80		$88,963 85	$22
DEDUCT—				
Amount received for damages,.....	10 00			
	927 80			
				3

REPAIRS OF SEWERS, WEST DIVISION.

Labor,.....		$2,808 63		
Cement,.....		225 97		
Repairing wagon and tools,.....		13 56		
Oakum,.....		7 00		
Blacksmith work,.....		4 10		
			3,059 26	
ADD—				
Depreciation in tools,.....	$ 90 11			
Brick used,.....	197 07			
Covers used,.....	466 22			
		753 40		
				3

MAN HOLE AND CATCH BASIN COVERS.

Lumber,.....		$2,915 96		
Labor,.....		2,463 40		
Nails and Spikes,.....		456 02		
Freight on lumber,.....		625 34		
Tar used,.....		112 00		
Tools,.....		11 00		
			6,583 72	
DEDUCT—				
Covers used for sewers and repairs,.....	$6,578 78			
Covers sold,.....	127 00			
Freight on lumber refunded,	22 00			
		6,727 78		

HOUSE DRAINS.

Services of draughtsmen,.....		$1,200 00		
Inspecting,.....		3,918 40		
Permit Clerk,.....		900 00		
Amounts carried forward,.....		$6,018 40	$98,606 83	$23

		Cash Payment.	True Cost.
Amounts brought forward,.....	$6,018 40	$98,606 83	$235,394 06
vertising,.....	364 52		
tionery and blank books,.....	200 00		
bor,.....	248 50		
laying drains,.....	269 87		
pairing drains,.....	25 15		
r fares,.....	164 65		
inting,.....	31 50		
ment, ...	75 34		
scellaneous,.....	43 65		
ols,.....	6 00		
		7,447 58	
DUCT—			
Received for permits issued,.....	$11,208 10		
" " labor,.....	106 25		
" " cement,.....	3 37		
	$11,317 72		
D—			
Pipe junctions used,.....	1,635 39		
t profits in cash,.....	$9,682 33		

OFFICE EXPENSES AND SALARIES.

laries of Commissioners, ...	$3,000 00		
lary of Secretary and assistant,.....	1,399 96		
lary of City Engineer, ...	1,500 00		
lary of Superintendent,.....	933 32		
lary of Clerks, ...	4,680 84		
lary of messenger, watchman & janitor,	762 00		
lary of draughtsman,.....	1,216 32		
nt of office,.....	2,250 00		
rniture, ...	215 81		
tionery, ...	466 37		
bor,.....	478 35		
inting sixth annual report,.....	164 78		
mber, ...	33 52		
,.....	26 85		
ining and glazing,.....	13 66		
stering water office,.....	8 33		
rinkling in front of office,.....	14 67		
al,.....	198 32		
lice badges, ...	7 33		
s fixtures and fitting, ...	10 40		
Amounts carried forward,.....	$17,380 83	$106,054 41	$235,394 06

		Cash Payment.	Tra
Amounts brought forward,.....	$17,380 83	$106,054 41	$235,
Keeping horse,.....	133 25		
Advertising,.....	38 76		
Plumbing, ...	14 86		
Blank books,.....	26 67		
Toweling, ...	6 67		
Hardware, ...	71 23		
Printing,.....	53 92		
Negotiating loan,.....	75 00		
Washing towels and awnings, ...	22 84		
Maps of Chicago, ...	52 00		
Cleaning office,.....	113 55		
Revenue stamps, ...	133 32		
Gas, ...	83 32		
Miscellaneous cash items, ...	89 33		
Temporary loan,.....	30,000 00		
		48,295 55	
DEDUCT—			
Amount received for temporary loan,..	$30,000 00		
" " "drain layers license	22 00		
	$30,022 00		
			18,2
SEWERAGE INTEREST.			
Interest on sewerage loan bonds, July 1st, 1868, and January 1st, 1869,.....	$127,510 00		
Interest on temporary loan,.....	933 33		
Commissions to American Exchange Nat. Bank,.....	318 77		
Coupons paid by City Treasurer,.....	420 00	129,182 10	
DEDUCT—			
Accrued interest on bonds sold,.....	2,832 59		
			126,3
SEWERAGE STOCK.			
Tools, ...	$249 75		
Sheeting,.....	792 05		
Buggy,.....	75 00		
Freight on sheeting,.....	50 40		
Pipe couplings,.....	24 05		
Labor, ...	18 00		
		1,209 25	
DEDUCT—			
Sheeting sold,.....	$462 10		
Amounts carried forward,.....		$284,741 31	$380,

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$284,741 31	$380,764 27
SEWERAGE PIPE.			
pe purchased,.....	$19,844 65		
bor,.....	907 00		
ight,.....	365 62		
vertising,.....	58 09		
		21,175 36	
DUCT—			
Pipe charged sewers and repairs,.....	$14,975 78		
" " house drains,.....	1,635 39		
Pipe sold,.....	716 35		
	$17,327 52		
SEWERAGE BRICK.			
ck purchased, ...	$37,631 82		
or, ...	1,052 86		
vertising,.....	147 25		
		38,831,93	
DUCT—			
Brick charged sundry sewers, ...	$36,745 78		
Brick sold,.....	8 40		
	$36,754 18		
			2,077 75
LARRABEE STREET SEWER.			
Hugh & Kelly, constructing sewer, ..	$5,202 75		
bor,.....	119 00		
mbing, ...	158 41		
		5,480 16	
NORTH WELLS STREET SEWER.			
Hugh & Kelly, constructing sewer, ..	$8,579 35		
or,.....	183 88		
		8,763 23	
CHESTNUT STREET SEWER.			
Hugh & Kelly, constructing sewer,...	$812 25		
or, ...	11 50		
		823 75	
Amounts carried forward,.....		$359,815 74	$382,842 02

		Cash Payment.	*Trust Ca*
Amounts brought forward,..... ...		$359,815 74	$382,843
CARL STREET SEWER.			
McHugh & Kelly, constructing sewer,...	$1,672 44		
Labor, ...	18 00		
		1,690 44	
GRANT STREET SEWER.			
McHugh & Kelly, constructing sewer,...	$1,162 57		
Labor, ...	72 50		
		1,235 07	
NORTH AVENUE SEWER.			
McHugh & Kelly, constructing sewer,...	$1,518 88		
Labor, ...	72 75		
		1,591 63	
WASHINGTON PLACE SEWER.			
McHugh & Kelly, constructing sewer,...	$630 00		
Labor, ...	6 75		
		636 75	
DIVISION STREET SEWER.			
Bartley Langan, constructing sewer,....	$2,364 50		
Labor, ...	34 50		
Plumbing,.....	80 94		
		2,479 94	
OAK STREET SEWER.			
Labor, ...		85 50	
SCHILLER STREET SEWER.			
McHugh & Kelly, constructing sewer,...		199 00	
GOETHE STREET SEWER.			
McHugh & Kelly, constructing sewer,...		205 00	
Amounts carried forward,.....		$367,939 07	$382,843

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$367,939 07	$382,842 02
GRANGER STREET SEWER.			
McHugh & Kelly, constructing sewer,...		95 00	
SIGEL STREET SEWER.			
McHugh & Kelly, constructing sewer,...		95 00	
SOUTH HALSTED STREET SEWER.			
B. Langan, constructing sewer,.....	$3,248 00		
B. Langan, extras,.....	116 87		
Labor,.....	96 25		
Plumbing,.....	32 39		
		3,493 51	
EIGHTEENTH STREET SEWER.			
B. Langan, constructing sewer,.....	$1,600 94		
Labor,.....	406 92		
Cement,.....	100 00		
		2,107 86	
WABASH AVENUE SEWER.			
B. Langan, constructing sewer,.....	$4,449 66		
B. Langan, extras,.....	153 00		
Labor,.....	47 50		
		4,650 16	
CALUMET AVENUE SEWER.			
Labor,.....		30 25	
PRAIRIE AVENUE SEWER.			
Labor,.....		19 00	
WENTWORTH AVENUE SEWER.			
Labor,.....		28 50	
PURPLE STREET SEWER.			
Labor,.....		28 75	
Amounts carried forward,.....		$378,482 10	$382,842 02

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$378,482 10	$382,842 (
HALSTED STREET SEWER.			
John Duffy, constructing sewer,.....	$9,391 54		
Woodruff & Raffin, constructing sewer,..	429 00		
" " extras,.....	11 25		
Plumbing,.....	276 00		
Cement,.....	23 65		
Labor, ...	815 63		
		10,947 07	
CHICAGO AVENUE SEWER.			
John Duffy, constructing sewer,.....	$6,026 43		
Labor, ...	329 00		
		6,355 43	
ERIE STREET SEWER.			
John Duffy, constructing sewer,.....	$3,737 50		
Labor, ...	377 25		
		4,114 75	
CANAL STREET SEWER.			
John Duffy, constructing sewer,.....	$3,434 35		
Labor, ...	114 25		
		3,548 60	
DESPLAINES STREET SEWER.			
John Duffy, constructing sewer, ...	$968 10		
Labor, ...	61 00		
		1,029 10	
ANN STREET SEWER.			
John Duffy, constructing sewer, ...	$927 24		
Labor, ...	14 63		
		941 87	
ADA STREET SEWER.			
John Duffy, constructing sewer, ...	$1,034 31		
Labor, ...	14 62		
		1,048 93	
Amounts carried forward,.....		$406,467 85	$382,842 (

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$406,467 85	$382,812 02
LAKE STREET SEWER.			
John Duffy, constructing sewer,.....	$4,326 26		
Labor,.....	215 62		
		4,541 88	
REUBEN STREET SEWER.			
Labor,.....		38 00	
MORGAN STREET SEWER.			
Labor,.....		23 75	
RUCKER STREET SEWER.			
Labor,.....		19 00	
SANGAMON STREET SEWER.			
John Duffy, constructing sewer,.....		402 55	
WEST EIGHTEENTH STREET SEWER.			
Brick,.....	$1,200 00		
Labor,.....	1,942 37		
Cement,.....	205 08		
		3,347 45	
MICHIGAN STREET DRAINS.			
John Duffy, constructing drains,		478 80	
DEDUCT—			
Refunded on account of drain,.....	$7 00		
			471 80
WEST VAN BUREN STREET DRAINS.			
O'Brien & Flanerdy, constructing drains,		987 92	
DEDUCT—			
Refunded on account of drain,.....	$195 88		
			792 04
Amounts carried forward,...		$416,307 20	$384,105 86

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$416,307 20	$384,105 86
NORTH CLARK STREET DRAINS.			
Chas. Berkenshaw, constructing drains,..		2,205 17	2,205 17
NORTH STATE STREET DRAINS.			
B. Langan, constructing drains,.....		331 76	331 76
WEST ADAMS STREET DRAINS.			
Woodruff & Raffin, constructing drains,..		256 00	256 00
HALSTED STREET DRAINS.			
Chas. Berkenshaw, constructing drains,..		799 50	799 50
ARCHER AVENUE DRAINS.			
John Duffy, constructing drains,.....		563 22	563 22
SANGAMON STREET DRAINS.			
J. McHugh, constructing drains, ...		574 64	
DEDUCT—			
Refunded on account of drains,.....	$63 36		511 28
BLUE ISLAND AVENUE DRAINS.			
Chas. Birkenshaw, constructing drains,.		712 00	712 00
FRANKLIN STREET DRAINS.			
B. O'Neil, constructing drains, ...		232 40	232 40
HURON STREET DRAINS.			
B. O'Neil, constructing drains, ...		70 68	70 68
HARMON COURT DRAINS.			
John P. Dickey, constructing drains, ...		104 50	104 50
ADAMS STREET DRAINS.			
Chas. Birkenshaw, constructing drains,..		394 00	394 00
MONROE STREET DRAINS.			
M. Mulany, constructing drains,...		652 16	652 16
Amounts carried forward,.....		$423,203 23	$390,938 53

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$423,203 23	$390,938 53
OHIO STREET DRAINS.			
B. O'Neil, constructing drains, ...		551 38	551 38
NORTH WELLS STREET DRAINS.			
J. P. Dickey, constructing drains, ...		207 00	207 00
PRAIRIE AVENUE DRAINS.			
Chas. Birkenshaw, constructing drains,..		143 10	143 10
TWENTY-SECOND STREET DRAINS.			
Chas. Birkenshaw, constructing drains,..		343 36	343 36
DESPLAINES STREET DRAINS.			
M. Mulany, constructing drains,.....		738 90	788 90
PINE STREET DRAINS.			
B. O'Neil, constructing drains,...		196 84	196 84
MICHIGAN AVENUE DRAINS.			
M. Magann, constructing drains, ...		1,323 49	1,323 49
CANAL STREET DRAINS.			
M. Mulany, constructing drains,.....		629 42	629 42
CLINTON STREET DRAINS.			
M. Mulany, constructing drains,.....		410 82	410 82
NORTH DEARBORN STREET DRAINS.			
Chas. Birkenshaw, constructing drains,..	$1,910 48		
E. McGrath, constructing drains,.....	88 11		
		1,998 59	
DEDUCT—			
Refunded on account of drain,.....	$61 28		1,937 31
INDIANA AVENUE DRAINS.			
M. Magann, constructing drains, ...		713 00	713 00
Amounts carried forward,.....		$430,509 13	$398,183 15

	Cash Payment.	*True Cost*
Amounts brought forward,.....	$430,509 13	$398,183 15
TWELFTH STREET DRAINS.		
M. Mulany, constructing drains,.....	111 15	111 15
WEST LAKE STREET DRAINS.		
Wm. Woodruff, constructing drains, ...	1,201 56	1,201 56
TRUSTEES CHICAGO THEOLOGICAL SEMINARY.		
Paid them amount advanced for sewer in 1866,.....	1,200 00	
SEWERAGE SINKING FUND MORTGAGES.		
Examining titles,.....	55 00	55 00
SINKING FUND.		
Amount paid sinking fund for its proportion of sewerage tax for 1867,.....	35,869 39	35,869 39
Total cash expenditures,.....	$468,946 23	$435,420 25

SEWERAGE SINKING FUND.

RECEIPTS

Proportion of sewerage tax for 1867,.....	$28,878 82	
Balance in hands of City Treasurer, April 1st, 1868,.....	4,114 65	
		$32,993 47

EXPENDITURES.

Paid Chase Bros. for examining title,.....	55 00	
Balance in hands of City Treasurer, April 1st, 1869,.....	32,938 47	
		$32,993 47

River Improvement Department.

Trial Balance, Ledger, Board of Public Works, March 31st, 1869.

	Dr.	*Cr.*
River Improvement Fund (due City Treasurer)....		$ 29,223
Expenses of Survey previous to adoption of plan..	$ 1,269 23	
Walter Kimball, Comptroller.....	13,000 00	
American Exchange National Bank.....	945 00	
Expenses of Illinois and Michigan Canal Survey...	23,166 64	
River Improvement Salary Account.....	24,750 00	
River Improvement Office Expense.....	1,582 16	
River Improvement Sinking Fund.....		3,883
River Improvement Bonds, 7 %		1,000,000
Discount on River Improvement Bonds.....	31,259 12	
River Improvement Loan Interest.....	65,104 86	
River Improvement Miscellaneous Expense.....	58,078 39	
C. B. Kimball & Co., Contractors.....	57,130 63	
Sanger, Steel & Co., Contractors.....	62,292 59	
Fox, Howard & Walker, Contractors.....	98,649 95	
Fox, Howard & Walker, 2d contract	197,458 33	
Hosch & Harroon, Contractors...	21,598 50	
C. E. Boyer, Contractor	177,764 76	
Hosch & Van Slyck, Contractors.....	39,750 25	
S. W. Norton, Contractor	52,608 98	
Lee & Graham, Contractors	23,370 75	
J. A. Hendricks & Co., Contractors	38,099 92	
Fox, Howard & Walker, Contractors, sec. 42, 43 & 44	18,109 13	
Fox, Howard & Walker, Contractors, sec. 20 to 26 inc.	7,186 75	
Carkin & Kimball, Contractors.....	8,978 13	
Hugh Maher, Contractor.....	1,518 10	
Barnard & Gowen, Contractors.....	9,435 00	
	$1,033,107 17	$1033,107 1

RIVER IMPROVEMENT FUND.

STATEMENT of the Cash Receipts by the Board of Public Works from April 1st, 1868, to March 31st, 1869, inclusive, and detailed statement of the cost of the various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds sale of 537 River Improvement Bonds, including accrued interest,	$534,671 74	
Repairs on Boat refunded	14 75	
		$534,686 49

EXPENDITURES.

		Cash Payment.	*True Cost.*
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners,	$6,000 00		
Rent of Office,	90 00		
Matches, Oil, etc.,	1 98		
		$6,091 98	$6,091 98
INTEREST.			
Amount of Coupons due July 1st, 1868, and January 1st, 1869,	$47,075 00		
Coupons paid by W. F. Wentworth, City Treasurer,	735 00		
Interest on advance on Bonds,	66 54		
Error in accrued interest on Bonds sold J. P. Brooks,	1,408 00		
Commissions to American Exchange National Bank,	117 61		
		49,402 15	49,402 15
Amounts carried forward,		$55,494 13	$55,494 13

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$55,494 18	$55,494 1
EXPENSES OF SURVEY.			
Engineers,.....	$3,100 00		
Rodmen,.....	1,527 67		
Making profile and maps, ...	115 50		
Throwing up banks to protect canal,....	612 50		
Rope,.....	1 80		
		5.357 47	
DEDUCT—			
Amount refunded for repairs of boat,...	14 75		5,342 7
MISCELLANEOUS.			
C. B. Kimball & Co., on acc't of contract,	$32,480 63		
Fox, Howard & Walker, " "	153,125 30		
Hosch & Harroon, " "	20,429 75		
C. E. Boyer, " "	103,049 76		
Hosch & Van Slyck, " "	24,722 25		
S. W. Norton, " "	36,339 20		
Lee & Graham, " "	13,744 50		
J. A. Hendricks & Co., " "	20,798 17		
Fox, Howard & Walker, " "	18,109 13		
Fox, Howard & Walker, " "	7,186 75		
Carkin & Kimball, " "	8,978 18		
Hugh Maher " "	1,518 10		
Barnard & Gowen, " "	9,435 00		
Advertising,.....	700 18		
Pumping at Bridgeport,.....	15,973 83		
Use of dredge, ...	4,800 00		
Legal services in Sanger, Steel & Co.'s case,	3,500 00		
Reporting in do., ...	465 00		
Express on bonds and coupons,.....	260 50		
Telegrams,.....	38 95		
J. M. Wilson, services as referee,.....	250 00		
Watching feeder,.....	115 00		
Engraving 500 bonds,.....	129 25		
Five acres of land,.....	200 00		
Lamps, wicks, etc.,.....	67		
Examining pumps at Lemont, ...	3 50		
Throwing up protection ditches, ...	67 00		
Labor on coupons,.....	8 00		
Printing, ...	20 00		
Section map,.....	2 00		
Miscellaneous items paid by engineer,....	99 39		
		476,549 94	476,549 9
Total cash expenditures,.....		$537,401 54	$537,386 7

CITY HALL FUND.

Trial Balance, Ledger, Board of Public Works, March 31st, 1869.

	Dr.	*Cr.*
City Hall Fund in hands of treasurer,..	$36,708 14	
City Hall Bonds,.....		$60,000 00
N. P. Loberg, contractor,.....	5,000 00	
Rose & Chapman, architects,.....	2,000 00	
City Hall miscellaneous expense,.....	9,587 60	
Discount on City Hall Bonds,.....	1,704 26	
L. W. Boldenweck,.....	5,000 00	
	$60,000 00	$60,000 00

CITY HALL FUND.

STATEMENT showing the cash receipts and detailed account work done under the charge of the Board of Public Wo during the year ending March 31st, 1869.

RECEIPTS.

Proceeds of 60 municipal bonds,.....	$58,295 74

EXPENDITURES.

		Cash Payment.	*True Co*
N. P. LOBERG.			
Paid him on account of contract,.....		$5,000 00	$5,000
ROSE & CHAPMAN, ARCHITECTS.			
Paid them on account,.....		2,000 00	2,000
L. W. BOLDENWICK.			
Paid him on account of contract, ...		5,000 00	5,000
MISCELLANEOUS EXPENDITURES.			
F. Letz, on acc't of contract for iron work,	$9,261 60		
Advertising for proposals,.....	46 50		
Express charges,.....	20 00		
Labor, ...	246 00		
Cement,.....	13 50		
		9,587 60	9,587
Total cash expenditures,.....		$21,587 60	$21,587
Balance in hands of treasurer, April 1st, 1869,		36,708 14	
		$58,295 74	

CITY BRIDEWELL FUND,

Trial Balance, Ledger, Board of Public Works, March 31st, 1869.

	Dr.	*Cr.*
City Bridewell Fund in hands of Treasurer, ...	$26,525 69	
Kavanagh & Merriman,.....	1,700 00	
City Bridewell Bonds, 7%,.....		$31,000 00
John M. Van Osdel,.....	2,000 00	
Discount on City Bridewell Bonds,.	725 00	
City Bridewell miscellaneous expenses,....	49 31	
	$31,000 00	$31,000 00

CITY BRIDEWELL FUND.

STATEMENT showing the Cash Receipts, and detailed account work done under the charge of the Board of Public Wo during the year ending March 31st, 1869 :

RECEIPTS.

Proceeds of 31 Municipal Bonds,.....	$30,275 00

EXPENDITURES.

		Cash Payment.	*True Ch*
KAVANAGH & MERRIMAN.			
Paid them on account of contract, ...		$1,700 00	$1,700
JOHN M. VAN OSDELL, ARCHITECT.			
Paid him on account,.....		2,000 00	2,000
MISCELLANEOUS EXPENDITURES.			
Use of Carriage, ...	$ 8 00		
Advertising for proposals,.....	21 31		
Surveying,.....	20 00		
		49 31	49
Total cash expenditures,.....		$3,749 31	$3,749
Balance in hands of Treasurer April 1st, 1869,.....		26,525 69	
		$30,275 00	

WASHINGTON STREET TUNNEL.

Trial Balance, Ledger, Board of Public Works, March 31st, 1869.

	Dr.	*Cr.*
Washington Street Tunnel Fund, am't due Treasurer,		$30,578 79
Washington Street Tunnel, Miscellaneous Expenses,	$60,280 36	
T. K. Lake, Contractor,	333,832 02	
Stewart, Ludlam & Co., Contractors,	20,584 57	
Washington Street Tunnel Bonds,		400,000 00
Discount on Washington Street Tunnel Bonds,	15,881 84	
	$430,578 79	$430,578 79

TUNNEL FUND.

STATEMENT showing the cash receipts and detailed acc
work done under the charge of the Board of Public
during the year ending March 31st, 1869.

RECEIPTS.

Proceeds 245 municipal bonds,.....		$238,013 34
Am't paid Ass't Harbor Master, refunded,		100 00
Voucher canceled,.....		17 50
		$238,130 34
Balance in hands of City Treasurer, April 1st, 1868,.....		$20,799 68

EXPENDITURES.

JAMES K. LAKE & CO.

		Cash Payment.
Paid them on account of contract,.....		$257,216 64
ADD—		
Payments prior to April 1st, 1868,....	$76,615 38	

MISCELLANEOUS EXPENDITURES.

Iron fence around tunnel approaches,...	$3,500 00	
Inspectors,.....	5,102 63	
Labor,.....	5,440 15	
Mastic and Asphaltum,.....	4,260 84	
Gas fitting,.....	1,889 75	
Rent of dock,.....	2,975 00	
Salary of assistant engineer,.....	2,383 33	
Salary of draughtsman, ...	1,399 92	
Amounts carried forward,.....	$26,951 62	$257,216 64

			Cash Payment.	*True Cost.*
.mounts brought forward,.....		$26,951 62	$257,216 64	$333,832 02
)f assistant harbor master,.....		1,725 80		
cting walks, stairs, etc.,.....		850 55		
.....		49 20		
gas pipe, ...		237 50		
)let,.....		75 00		
s, oil cans, wicks, etc., ...		83 90		
sing,.....		21 38		
..		21 83		
;e pipe,.....		29 07		
cting wall,.....		67 50		
.....		28 00		
teeping,.....		41 66		
ng iron railing,.....		15 00		
;.....		35 00		
.....		15 08		
.....		776 18		
.....		172 44		
:ry,.....		6 00		
,....		476 57		
ig,.....		129 78		
aphing 200 bonds,.....		264 30		
ag, ...		172 54		
on bonds,.....		33 60		
ms and miscellaneous items,....		13 17		
			32,292 67	
nses prior to April 1st, 3,.....	$28,105 19			
int paid to Stewart, llam & Co.,.....	20,584,57	48,689 76		
:—				
r of harbor master inded,.....	$100 00			
ner canceled,.....	17 50	117 50		
		$48,572 26		80,864 93
otal cash expenditures,.....			$289,509 31	$414,696 95
from true cost column amount of ents prior to April 1st, 1868,.....				$125,305 14
otal true cost for year ending April 1st, 1869, ...				$289,391 81

CITY DEPARTMENT.

Trial Balance, Ledger, Board of Public Works, March 31st, 1869.

	Dr.	*Cr.*
City Appropriation Fund,	$385,118 97	
North Division,		$5,209
South Division,	1,890 66	
West Division,	12,828 41	
City office expenses,	49,823 73	
North Division sidewalks,		5,208
South Division sidewalks,		3,333
West Division sidewalks,		6,819
Public Parks,		14,667
Street Lamps, West Division,		65
Washington Street Tunnel,	245 00	
Public Buildings,		14,314
Chicago Cemetery,		4,731
Sidewalk west side of Cemetery,		158
Lumber account,	740 00	
House moving and street permits,		11,374
Street Lamps,		4,071
Public Hydrants,		736
Stone account,	414 79	
Samuel Polkey, R. C.,	308 12	
Warrant No. 480,		308
City Proportional Expense account,		5,159
House numbers,		1,896
Public Benefits,		286,649
Special appropriation for land damages,		15,000
Bridge Department,	6,094 60	
Chicago Harbor,	7,609 46	
Western Avenue Bridge,		600
Polk Street Bridge,		29,542
Indiana Street Bridge,		25,500
Adams Street Bridge,		30,830
Lake Shore Roadway,	808 84	
	$465,882 58	$465,882

Board of Public Works Appropriation Fund.

STATEMENT of the cash receipts by the Board of Public Works from April 1st, 1868, to March 31st, 1869, inclusive, and detailed statement of the cost of various operations conducted by the Board during the same time.

RECEIPTS.

Amount Appropriated by Common Council,	$928,087 27	
Amount of Temporary Loan for new bridges, and running expenses,	256,407 22	
Permits issued,	5,720 00	
Received from house numbers,	655 50	
Received from sand sold,	66 55	
Damages to bridges,	324 80	
Lamp posts,	144 75	
Received from special assessments for expenses,	7,168 22	
Repaving streets and repairing walks,	420 15	
Received for work for Fire Department,	1,487 87	
Received for license and scale permits,	39 75	
Received for labor from private parties,	30 50	
Repairs on Wells street viaduct,	400 00	
Received for labor and inspection refunded,	66 00	
Received for constructing walks,	240 12	
Received for freight on sweeping machine,	112 00	
Lumber sold,	70 81	
Stone sold,	18 00	
Received from J. Anderson & Co., contract forfeit,	200 00	
Received from bonds and licenses,	9 00	
Received from cleaning alleys in South Division,	11 00	
Carpet sold,	5 00	
Stationery sold,	8 00	
Received from marine insurance,	12,908 73	
	$1,214,596 24	
Balance in hands of City Treasurer, April 1st, '68,	178,534 69	
		$1,393,130 93

EXPENDITURES.

NORTH DIVISION.

		Cash Payment.
Labor on streets,	$33,987 64	
Lumber,	4,279 36	
Stone and gravel,	3,114 88	
Nails and spikes,	384 98	
Cleaning streets,	3,371 08	
Tools,	231 58	
Engineers and rodmen,	1,079 66	
Blacksmith work,	21 85	
Interest on temporary loans,	1,393 43	
Use of dock,	47 50	
Sand sold,	40 00	
		$47,051 96

DEDUCT—

Amount received from labor,	$912 14		
Lumber sold,	70 81		
Sand sold,	40 00		
		1,022 95	$46,

SOUTH DIVISION.

Labor on streets,	$43,326 04	
Cleaning streets,	25,889 38	
Lumber,	6,405 61	
Stone and gravel,	17,095 23	
Engineer and rodman,	1,815 56	
Freight on gravel and lumber,	1,262 80	
233 bbls. composition,	1,539 00	
Nails and spikes,	790 75	
Street sprinkling,	293 34	
One steam engine and saw,	600 00	
Sawing paving blocks,	275 40	
Tools,	280 26	
Repairing tools,	56 95	
Felt and roofing,	41 00	
Moving house on Wallace street,	90 00	
Horse feed,	37 33	
One tar kettle wagon,	65 00	
Damages to horse,	15 00	
Car fares,	25 00	
Interest on temporary loans,	2,786 86	
		102,690 51
Amounts carried forward,		$149,742 47 $

			Cash Payment.	*True Cost.*
Amounts brought forward,.....			$149,742 47	$46,029 01
DUCT—				
Amount received for labor,..	$616 75			
Gravel sold,.....	71 10			
Freight on sweeper,.....	112 00			
		799 85		
				101,890 66
WEST DIVISION.				
bor on streets,.....		$83,945 59		
aning streets, ...		4,574 17		
mber,.....		13,173 51		
ne and gravel,.....		5,542 17		
gineer and rodman,.....		1,248 73		
ils and spikes,.....		1,479 50		
ls,.....		253 03		
of dock,.....		73 00		
np posts,.....		68 00		
np posts broken,.....		35 00		
rse keeping, ...		26 82		
ight on lumber,.....		14 00		
fares, ...		7 00		
erest on temporary loans, ...		2,786 86		
			113,227 38	
DUCT—				
mount received for two lamp posts,..		$68 00		
amp post broken,.....		35 00		
abor, ...		295 97		
		$398 97		112,828 41
SIDEWALKS, NORTH DIVISION.				
structing walks,.....		$255 25		
ary of superintendent,.....		400 00		
ary of inspectors,.....		1,800 00		
nting notices,.....		16 00		
blic benefits, ...		6 05		
tionery,.....		26 00		
p of Chicago,.....		3 10		
vertising,.....		14 10		
			2,520 50	
DUCT—				
mount received for constructing walk,		$58 15		2,462 35
Amounts carried forward,.....			$265,490 35	$263,210 48

		Cash Payment.	
Amounts brought forward,.....		$265,490 35	$26
SIDEWALKS, SOUTH DIVISION.			
Constructing walks,.....	$888 49		
Salary of superintendent,.....	400 00		
Salary of inspectors.....	2,700 00		
Advertising and printing notices,..... ..	30 10		
Stationery,.....	26 15		
Public benefits,..... ...	52 12		
		4,096 86	
DEDUCT—			
Amount received for constructing walks,	$59 20		4
SIDEWALKS, WEST DIVISION.			
Constructing walks,.....	$1,564 01		
Salary of superintendent, ...	400 00		
Salary of inspectors,.....	3,328 89		
Printing and stationery,.....	44 00		
Public benefits,.....	32 67		
Advertising,.....	14 42		
Map of Chicago,.....	6 75		
		5,390 74	
DEDUCT—			
Amount received for constructing walks,	77 18		5,
LAKE PARK.			
Dirt used for filling,.....	$6,214 20		
Labor,.....	1,801 80		
Superintendent, ...	500 00		
Inspectors,.....	941 13		
Cost of fence,.....	613 18		
Cost of walk,.....	561 63		
36 lamp posts,.....	1,224 00		
Advertising,.....	31 00		
Hardware, ...	5 70		
Grass seed,.....	20 20		
		11,912 84	11,
JEFFERSON PARK.			
Constructing walk,.....	$423 78		
Removing walk,.....	40 00		
Labor,.....	93 50		
		557 28	
Amounts carried forward,.....		$287,448 07	$2

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$287,448 07	$284,474 49
)UCT—			
mount received for removing walk,..	40 00		517 28
DEARBORN PARK.			
rees,.....	112 00		
or, ...	81 25		
ing plans for fountain,.....	21 00	214 25	214 25
PUBLIC PARKS.			
cing Union square,.....		134 10	134 10
WASHINGTON PARK.			
structing walks,.....	879 50		
or,.....	87 12	966 62	966 62
UNION PARK			
or,.....	9,341 82		
avating lakes,....	2,103 93		
es,.....	265 75		
es,.....	668 20		
adam,.....	533 77		
lges constructed,.....	6,413 18		
erintendent, ...	350 00		
ector,.....	75 00		
ertising,.....	69 76		
een signs, ...	22 50		
ss seed,.....	105 50		
ls,.....	46 75		
ls,.....	14 25		
aber, ...	45 38		
ating fence,.....	600 00		
		20,655 79	
)UCT—			
abor refunded,..... .	66 00		20,589 79
LINCOLN PARK.			
res and walks,.....	$15,918 06		
asplanting trees,.....	1,931 25		
Amounts carried forward, ...	$17,849 31	$309,418 83	$306,896 58

		Cash Payment.	*True C*
Amounts brought forward, ...	$17,849 31	$309,418 83	$306,89(
Sewer on Asylum place,.....	1,083 56		
Settees,.....	427 10		
Damages,.....	300 00		
Labor,.....	988 48		
Superintendent,.....	350 00		
Flag staff,.....	312 00		
Bridges repaired,.....	216 18		
Freight on swans,.....	78 00		
Lumber,.....	55 20		
Advertising,.....	38 50		
One mower,.....	35 00		
Music stands,.....	66 50		
Gate tender, ...	50 00		
		21,849 83	21,849
PUBLIC BUILDINGS—ARMORY.			
Walk approaches,.....	$213 70		
Carpenter and mason work,.....	43 50		
Lightning rod,.....	23 75		
Painting and glazing,.....	749 10	1,029 75	1,029
NORTH MARKET.			
Carpenter work,.....	$45 67		
Repairs,.....	3,997 75		
		4,043 42	4,043
BRIDEWELL.			
Carpenter work, ...	$59 93		
Lumber,.....	70 50		
Nails,.....	36 50		
Iron work,.....	5 60		
Tools,.....	17 20		
Gas fitting,.....	19 72		
		209 45	209
COURT HOUSE.			
Reglazing cupola, ...	$4 78		
Repairs,.....	52 00		
Plumbing, ...	6 95		
		63 73	
DEDUCT—			
Lumber and nails,.....	$9 90		53
Amounts carried forward,.....		$336,615 01	$334,082

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$336,615 01	$334,082 81
CHICAGO CEMETERY.			
Fencing grounds above city limits, ...	$515 85		
Salary of gate keeper,.....	900 00		
Watching sand,..... ..	179 00		
Lumber, ...	12 17		
		1,607 02	
DEDUCT—			
Sand sold,.....	$26 55		
			1,580 47
LUMBER ACCOUNT.			
Lumber purchased not used, ...		110 00	110 00
HOUSE MOVING AND STREET PERMITS.			
Special constables,.....	$1,715 98		
Permit clerk, ...	300 00		
Permits not used, ...	10 00		
Printing blanks,...	30 00		
Horse feed, ...	4 15		
		2,060 13	
Received for permits,..... $5,719 00			
STREET LAMPS.			
Error in assessment on Park Avenue,....	$10 62		
Deficiency on warrant 509,.....	183 00		
Public benefits,.....	1,584 29		
		1,777 91	
DEDUCT—			
Refunded for lamp,.....	$41 75		1,736 16
PUBLIC HYDRANTS			
Hydrants,.....	$177 82		
Labor,.....	11 68		
Repairs, ...	20 52		
One tap.....	3 10		
		213 12	213 12
Amounts carried forward,.....		$342,383 19	$337,722 56

		Cash Payment.	True C
Amounts brought forward,.....		$342,383 19	$337,72
CHICAGO HARBOR.			
Dredging,.....	$76,897 40		
Salary of Harbor Master, ...	1,601 96		
Repairing dock,.....	1,630 38		
Labor, ...	1,337 48		
Use of Tugs,.....	376 00		
Advertising, ...	49 88		
Lumber,.....	87 51		
Oil, ...	29 75		
Keeper of light house,.....	86 02		
Wagon for City Engineer,.....	75 00		
Removing obstructions, south branch,....	201 05		
Painting life boat, ...	33 20		
		82,405 63	82,40
STONE ACCOUNT.			
Stone purchased not used,.....		$432 79	$43
HOUSE NUMBERS.			
Printing blanks,..... ..	$18 00		
Painting numbers,.....	32 00		
Number clerk, ...	253 84		
		303 84	
Received for numbers,..... $655 50			
BRIDGE DEPARTMENT.			
Carpenter work,.....	$12,857 84		
Lumber, ...	4,877 12		
Driving piles and use of scow,.....	2,281 06		
Salary of Assistant Superintendent,.....	1,853 14		
Painting bridges, ...	1,016 40		
Oakum and rope,.....	112 85		
Coal used,.....	463 75		
Piles, ...	779 84		
Castings,.....	277 70		
Lamps, lanterns, chimneys and wicks,....	283 83		
Lard oil and kerosene, ...	487 94		
Stone,.....	44 54		
Nails and spikes,.....	623 37		
Blacksmith work, ...	798 26		
Bridge house repairs,.....	162 15		
Amounts carried forward,.....	$26,919 79	$425,525 45	$420,560

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$26,919 79	$425,525 45	$420,560 98
lware,.....	31 18		
,.....	14 00		
,.....	28 62		
e keeping,.....	103 91		
n,.....	317 76		
ertising,.....	138 64		
ks,.....	78 00		
fitting and fixtures,.....	24 24		
es and fixtures, ...	70 43		
of tugs,.....	99 00		
s,.....	137 91		
		27,963 48	
UCT—			
nount received for damages, ...	$324 80		27,638 68
RUSH STREET BRIDGE.			
ling bridge,.....	$2,300 00		
ings, ...	223 89		
.....	8 00		
		2,531 89	2,531 89
STATE STREET BRIDGE.			
ling bridge,.....	$1,960 00		
ber,.....	318 43		
,.....	61 50		
ages,.....	527 25		
		2,867 18	
UCT—			
aount received for repairs on viaduct,	$400 00		2,467 18
CLARK STREET BRIDGE.			
ing bridge,.....		1,940 00	1,940 00
WELLS STREET BRIDGE.			
ing bridge,.....	$1,940 00		
and driving same,.....	995 90		
lamps on viaduct,.....	60 00		
		2,995 90	2,995 90
Amounts carried forward,.....		$463,323 40	$458,134 18

		Cash Payment.	True Cha
Amounts brought forward,.....		$463,823 40	$458,134
LAKE STREET BRIDGE.			
Temporary loan,.....	$6,800 00		
Interest on temporary loan,.....	287 86		
Labor and material,.....	634 89		
Piles and driving same,.....	886 00		
Tending bridge,.....	1,860 00		
		10,468 75	10,468 7
RANDOLPH STREET BRIDGE.			
Tending bridge,.....	$1,610 00		
Driving piles,.....	727 10		
White-washing and plastering bridge house,	38 00		
		2,375 10	2,375 1
MADISON STREET BRIDGE.			
Tending bridge,.....	$1,700 00		
Driving piles,.....	1,513 70		
Lumber,.....	265 80		
Repairs of abutment,.....	21 30		
		3,500 80	3,500 8
VAN BUREN STREET BRIDGE.			
Tending bridge,.....		$1,660 00	1,660 0
THROOP STREET BRIDGE.			
Fox & Howard, constructing bridge,.....	$12,649 70		
Tending bridge,.....	190 00		
		12,839 70	12,839 7
POLK STREET BRIDGE.			
Tending bridge,.....	$1,600 00		
Use of tug,.....	12 00		
Driving piles,...	229 30		
Repairing bridge, ...	210 56		
		2,051 86	2,051 8
Amounts carried forward,.....		$496,719 61	$491,030 3

		Cash Payment.	*True Cost.*
Amounts brought forward,.....		$496,719 61	$491,030 34
TWELFTH STREET BRIDGE.			
ox & Howard, constructing bridge,.....	$44,499 40		
spector,.....	253 75		
ending bridge,.....	1,600 00		
		46,353 15	46,353 15
HALSTED STREET BRIDGE.			
ending bridge, ...		1,460 00	1,460 00
EIGHTEENTH STREET BRIDGE.			
ox & Howard, balance for construction,	$1,000 00		
abor and material, ...	167 25		
epairs, ...	23 64		
hree lamp posts, ...	81 00		
amages by bridge, ...	48 48		
ending bridge,.....	1,600 00		
		2,920 37	2,920 37
ARCHER ROAD BRIDGE.			
ending bridge,.....		520 00	520 00
FULLER STREET BRIDGE.			
ending bridge,.....		520 00	520 00
REUBEN STREET BRIDGE.			
ending bridge,.....		380 00	380 00
KINZIE STREET BRIDGE.			
ending bridge,.....		1,580.00	1,580 00
DIVISION STREET BRIDGE.			
ox and Howard, constructing bridge,...	$15,500 00		
dvertising proposals,.....	19 38		
xtra work, ...	673 15		
		16,192 53	16,192 53
INDIANA STREET BRIDGE.			
ending bridge,.....	$1,460 00		
ox & Howard, constructing bridge,.....	3,500 00		
		4,960 00	4,960 00
Amounts carried forward,.....		$571,605 66	$565,916 39

		Cash Payment.	Tr
Amounts brought forward,.....		$571,605 66	$55
ERIE STREET BRIDGE.			
Tending bridge,.....		1,380 00	
CHICAGO AVENUE BRIDGE.			
Fox & Howard, balance for construction,.	$532 00		
Piles and driving same,.....	442 22		
Painting,.....	52 42		
Cement,.....	12 50		
Repairing walk,.....	72 25		
Tending bridge,.....	1,380 00		
		2,491 89	
NORTH AVENUE BRIDGE.			
Tending bridge,.....		780 00	
CLYBOURN AVENUE BRIDGE.			
Tending bridge,.....		520 00	
NORTH HALSTED BRIDGE.			
Tending bridge,.....		940 00	
OFFICE EXPENSES AND SALARIES.			
Salary of Commissioners,.....	$3,000 00		
Salary of Secretary and assistant,.....	1,399 96		
Salary of City Engineer,.....	1,500 00		
Salary of Superintendent, ...	933 32		
Salaries of bookkeepers and clerks,.....	3,449 65		
Salaries of assistant engineers,.....	6,436 41		
Salaries of draughtsmen,...	6,672 60		
Salaries of special assessment clerks,.....	11,646 64		
Salaries of messenger, janitor & watchman,	754 00		
Temporary loans,.....	256,407 22		
Interest on same,.....	362 50		
Advertising,.....	9,182 97		
Rent of office, ...	2,250 00		
Examining records,.....	50 00		
Carpenter work,.....	229 90		
Repairs, ...	43 59		
Gas,.....	83 29		
Amounts carried forward,.....$304,402 05		$577,717 05	$5

		Cash Payment.	*True Cost.*
Amounts brought forward,.....	$304,402 05	$577,717 05	$572,027 78
Printing Sixth Annual Report,.....	164 77		
Commissioners' oaths,...	161 50		
Police badges,.....	7 33		
Stationery and blank books,.....	604 76		
Repairing surveyor's instruments,.....	80 00		
Furniture, carpets and mats,.....	283 05		
Ventilators,.....	15 11		
Revenue stamps,.....	133 34		
Excess in costs of proceedings,.....	43 63		
Towels,.....	6 66		
Lumber,.....	84 85		
Scale permit not used, ...	6 00		
Maps of Chicago, ...	32 00		
Use of carriage,.....	1 66		
Drawing materials,.....	68 53		
Copies of objections to special assessments,	125 00		
Street sprinkling,.....	14 66		
Gas fixtures and fitting,.....	10 40		
Auctioneer's license,.....	6 67		
Sundry cash items,.....	89 18		
Printing, ...	592 56		
Horse feed, ...	176 19		
Coal,.....	203 98		
Ice,..... ..	26 85		
Reporting sundry cases,.....	150 00		
Washing towels and cleaning office,.....	144 10		
Hardware,.....	76 74		
		807,611 57	
DEDUCT—			
Amount received for temporary loans,	$256,407 22		
Cost of proceedings on sundry assessm'ts	7,168 22		
Contract forfeit of J. Anderson & Co.,..	200 00		
Surveyor's license, ...	39 00		
Scale permits,.....	15 75		
Blank books,.....	8 00		
Labor,.....	50		
	$263,833 69		43,777 88
INTERSECTIONS OF STREETS.			
Paving intersections of Jefferson street,..	$367 83		
" " Kinzie street, ...	435 62		
" " Halsted street,....	4,272 50		
" " North Clark st,.	7,296 64		
Amounts carried forward,.....	$12,372 59	$885,328 62	$615,805 66

		Cash Payment.	True
Amounts brought forward,.....	$12,372 59	$885,328 62	$615,8
Paving intersections of South Clark st.,..	1,401 24		
" " Division street, ..	644 71		
" " Michigan street,..	11,302 53		
" " North State street,	8,036 39		
" " Blue Island av.,..	6,709 59		
" " North Wells st.,..	7,168 60		
" " Prairie av.,.....	2,105 52		
" " Michigan av.,.....	109 60		
" " 22d street,.....	5,562 83		
" " 12th street, ...	298 16		
" " Franklin street,..	4,362 33		
Macadamizing intersection Chicago av.,..	18,430 81		
" " Jefferson st.,..	725 85		
" " Blue Island av.	6,500 00		
Filling intersections Bremer street,.....	1,699 18		
" " Jefferson street,.....	10 80		
" " Alleys in B. 47, S. S.,	24 00		
" " W. Adams street,....	1,919 82		
" " W. Washington st.,..	339 20		
Planking alleys in O. T.,.....	261 91		
Opening sundry alleys,.....	597 46		
Damages,.....	500 00		
Wells street viaduct,.....	4,500 00		
Lumber,.....	211 33		
Labor,.....	7,145 73		
Cement, ...	1,136 25		
Inspector,.....	56 25		
Improving Calhoun place,.....	130 62		
Curb cor. N. State st. and Chicago av.,...	48 75		
Surveying Halsted street,.....	10 00		
Sewerage pipe,.....	18 60		
Deficiency in extending La Salle street,..	435 27		
Public benefits, ...	58 55		
Filling intersect'n of Adams & Desplaines,	12 25		
Paving intersection North Wells street,..	6,772 76		
" " Halsted street,.....	11,099 86		
		122,719 34	
DEDUCT—			
Curbing cor. North State & Chicago av.,	$48 75		122,6
Total cash expenditures,.....		$1,008,047 96	$738,4
Balance in Treasurer's hands April 1st, 1869,		$385,118 97	
		$1393,166 93	

RECAPITULATION.

Amount expended for Water Fund,	$696,914 75
Amount expended for Sewerage Fund,	468,946 23
Amount expended for River Improvement Fund,	537,401 54
Amount expended for City Bridewell Fund,	3,749 31
Amount expended for City Hall Fund,	21,587 60
Amount expended for Washington st. Tunnel Fund,	289,509 31
Amount expended for Appropriation Fund,	1008,047 96
Total cash expenditures from April 1st, 1868, to March 31st, 1869,	$3,026,156 70

Respectfully submitted,

E. M. JOHNSON,

Bookkeeper.

NINTH ANNUAL REPORT

OF THE

Board of Public Works,

TO THE

COMMON COUNCIL

OF THE

CITY OF CHICAGO,

FOR THE

Municipal Fiscal Year ending March 31, 1870.

NDDA

CHICAGO:
PRINTED AT THE LAKESIDE PRESS.
1870.

NINTH ANNUAL REPORT

OF THE

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TO THE

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FOR THE

Municipal Fiscal Year ending March 31, 1870.

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CHICAGO:
PRINTED AT THE LAKESIDE PRESS.
1870.

MEMBERS OF THE BOARD.

JOHN McARTHUR, COMMISSIONER AND PRE

W. H. CARTER, COMMISSIONER AND TREASU

REDMOND PRINDIVILLE, COMMISSIONER.

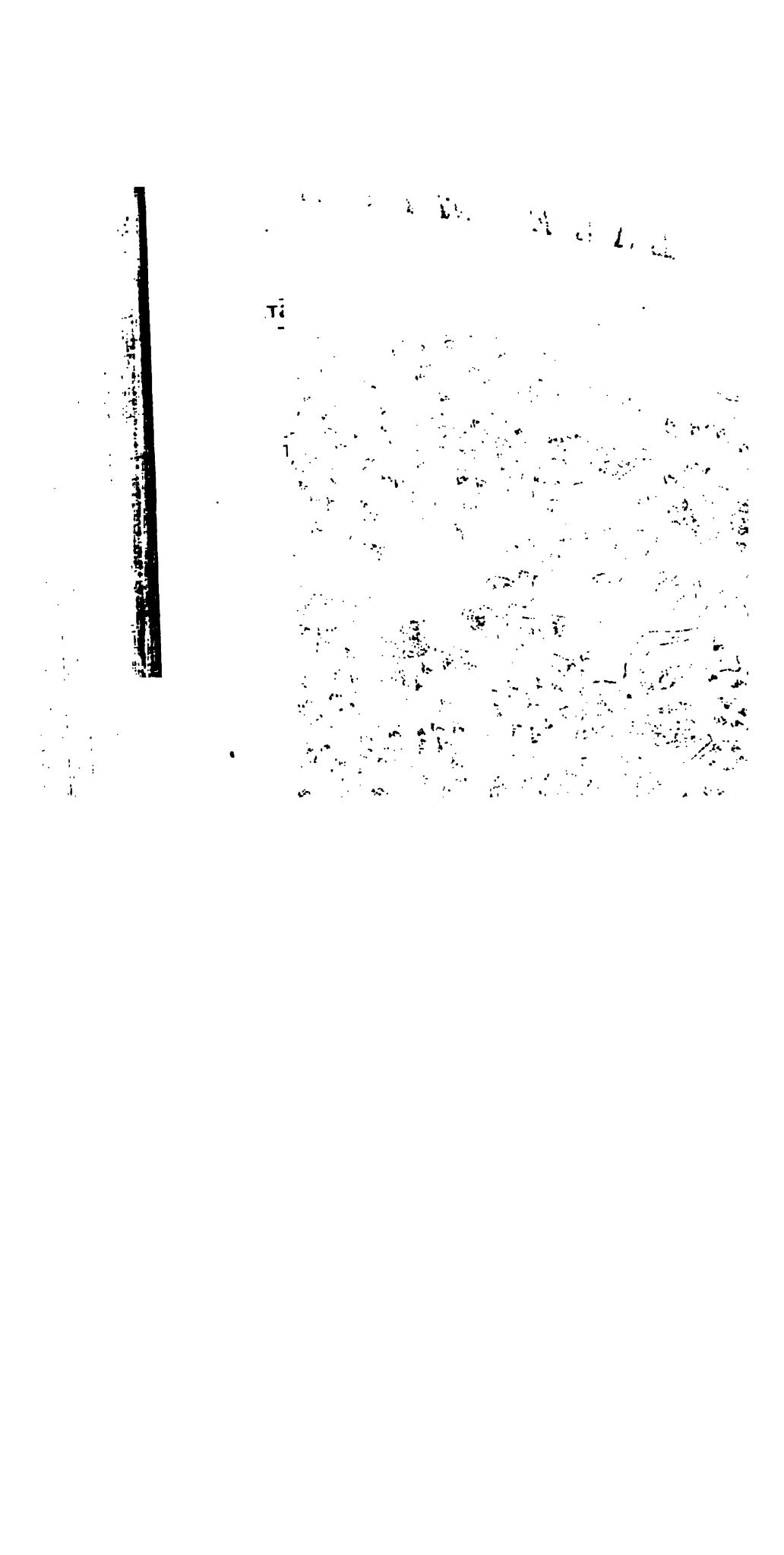
WILLIAM GOODING, } MEMBERS ACTING ON
EDWARD B. TALCOTT, } PERTAINING TO C
CAGO RIVER.

OFFICERS.

A. W. TINKHAM, SECRETARY.

E. S. CHESBROUGH. CITY ENGINE


ST.
EUGENIE
ST.
WELLS
ST.
LA SALLE
ST.
NORTH
AVE.
CLARK ST.
DEARBORN ST.
LAKE
Litt. Chas. Shober, Chicago



COMMISSIONERS' REPORT.

OFFICE OF THE BOARD OF PUBLIC WORKS
CHICAGO, OCT. 1ST, 1870.

To the Common Council of the City of Chicago:

The Board of Public Works submit herewith their annual report for the year ending March 31st, 1870.

ORGANIZATION.

Several changes have occurred in the Board during the year. The term of office of A. H. Burley, Esq., the Commissioner for the North Division, expired at the close of last year, on the confirmation by your honorable body of the appointment of his successor. Commissioner Prindiville succeeded Mr. Burley, entering upon the duties of his office, Jan. 1st, 1870.

One other change was caused by the election of Hon. R. B. Mason, as Mayor of the city, inducing his resignation as a member of the Board. E. B. Talcott, Esq., was appointed by the Governor of the State as his successor. Mr. Talcott acts only when the deepening of the Illinois and Michigan Canal, and kindred matters are involved.

In the statements which follow, the same order is pursued as in previous annual reports.

WATER WORKS.

CONDITION OF THE WORKS GENERALLY.

At no time during the year has the supply of water to the whole city been interrupted. An alarming accident occurred, however, on the 18th of August, by which the West Division was for about three days deprived of the larger portion of its supply. A vessel carelessly dragging anchor, broke the large main passing under the river at Chicago avenue. The accident, occurring in the heat of summer, and when with every facility it was hardly possible to furnish sufficient water to the more remote parts of the city, was the cause of much temporary inconvenience and discomfort. It however served the good end of originating a means of passing the river quite secure from any such risks and liabilities, and before the close of the year, mains were laid under the bed of the river, not only at Chicago avenue, but also at Division street, in substantial brick tunnels of six feet diameter, and at such depth as to be wholly secured from accidents. Hereafter it is not likely that any important main will be laid across the river, excepting through tunnels, where they will be safe from injury and accessible for repairs.

The fact is not without interest, that in the year 1861, the Board of Water Commissioners had under consideration the propriety of building a tunnel under the river for the principal main supplying the South Division, the Pine street and Wabash avenue main, and went so far as to prepare plans and receive bids for the work. The bids for its construction were low, and the parties responsible, but the limited knowledge and lack of experience then possessed as to such structures, deterred the Board, and the main was eventually laid in the ordinary way, a boiler-iron syphon deposited in a trench dredged in the bed of the river.

The very full discussion which followed the accident to the Chicago avenue main, particularly as to what should be done to

fford a uniform supply of water to the more distant parts of the Vest Division, led to the consideration of the whole subject of mproving and equalizing the supply to all parts of the city, and inally to the plan for additional pumping works in the south-vest part of the city, to be supplied by a second lake tunnel djacent to the present one, and a land tunnel as a conduit con-ecting the lake tunnels and pumping works on the lake shore nd the proposed new works. This plan has since been adopted y your honorable body.

The supply to the city has been wholly drawn through the ake tunnel and from the inlet at the lake crib, and has always een pure and good. No city has water of better quality. The ollowing table is of interest, as showing the relative tempera-ures of the air and of the water at the crib, at its entrance into he tunnel; for all months of the year. The observations of the emperature of the water were made in the well within the crib. The water is introduced to this well by conduits through the crib, ome distance below the level of the lake.

TEMPERATURE—FAHRENHEIT.

Months.	Air			Water		
	Highest.	*Mean.*	*Lowest.*	*Highest.*	*Mean.*	*Lowest.*
April, 1869	61°	44°	31°	44°	38°	33°
May, "	69°	51°	41°	51°	46°	43°
June, "	74°	63°	53°	60°	53°	50°
July, "	80°	71°	62°	67°	63°	60°
August, "	88°	75°	66°	72°	67°	64°
Sept., "	76°	65°	53°	72°	63°	57°
October, "	59°	45°	28°	57°	47°	40°
Nov, "	50°	35°	28°	40°	36°	33°
Dec, "	38°	30°	18°	33°	32°	32°
Jan, 1870	40°	28°	10°	32°	32°	32°
Feb., "	39°	30°	− 9°	33°	32°	32°
March, "	41°	33°	12°	33°	32°	32°

The works are generally in good state, with this exception, hat the experience of the year has only made more manifest the ruth of last year's statement, that to insure a sufficient and uni-orm supply to the city, additional engines and larger mains hould be got into use with all possible despatch.

NEW ENGINE HOUSE AND WATER TOWER.

Many minor details lacking on these buildings at the beginning of the year, were completed during its time, and final settlement made with the contractors for all work done.

NEW ENGINES.

It was not until somewhat late in the season that the order was obtained from your honorable body, to proceed with the erection of new engines at the pumping works. Plans for these engines had for some time previous been under consideration, but they were not fully made up and adopted until the Chief Engineer of the Pumping Works, D. C. Cregier, Esq., had, by orders of the Board, examined the principal pumping engines of the country. It was thought best, even at the sacrifice of considerable time, to profit by whatever of value could be obtained from the experience of other cities. At the date of this writing, however, the engines, with boilers, are in process of manufacture, at the Knap Fort Pitt Foundry Works, Pittsburgh, Pa., to be completed and set up ready for use by August 1st. 1871.

The engines are to be two vertical beam condensing-engines, set eight feet apart, coupled together by one shaft, with cranks and fly-wheel. The working capacity will be the delivery of 36,000,000 U. S. gallons in twenty-four hours, under a head of 150 feet.

In the meantime, the consumption of water has greatly increased. The average daily supply for the year ending March 31st, 1869, was 14,725,000 gallons. The same for the year ending March 31, 1870, amounted to 18,633,278 gallons, the percentage of increase of this year's pumping over that of the preceeding year being about 26½ per cent.

WATER PIPES.

It was remarked in the last report that the length of pipes laid during that year, (30½ miles,) exceeded that of any previous year. The amount for the present year is, however, still greater, summing up as follows:

In the South Division,		38,495 feet.
" West "		97,404 "
" North "		31,605 "
Total		167,504 feet,

or $31\frac{3}{5}\frac{8}{2}\frac{2}{8}\frac{4}{0}$ miles. Of this total, however, 2,436 feet was of pipes laid in place of smaller ones removed.

There are now laid in the city, of supply and distribution mains of all sizes, 239 miles and 4,763 feet.

The system of supply mains, making circuit through the three divisions of the city, to which attention was called last year, is being rapidly laid, and is already so far in use as to afford a marked benefit to many parts of the city.

The Board, as a rule, order water pipes laid where the revenue will be sufficient merely to pay the interest on the pipes as put down, which amounts at the present price to about fifteen cents per foot in length of pipes. When no more than this minimum revenue is obtained, such lengths of pipes must of course, for a while, be maintained at a loss. Experience, however, shows that the laying of the pipes is speedily followed by the erection of new buildings, and such streets soon become self-supporting. Although the amount laid last year was so great, the continued growth of the city, and the extension of its improvements is such, that the Board find it still very difficult to obtain enough pipes to satisfy the demand upon them, but will continue to put down all that can be obtained.

FIRE HYDRANTS.

New hydrants were erected during the year, in the three parts of the city, as follows:

In the South Division,	58
" West "	133
" North "	33
Total,	224

Total number of hydrants erected in the city, 1,294.

TAPPING OF WATER PIPES.

The number of taps inserted in the pipes was very large. The number of each size is given below:

½ inch,	2708
¾ "	4477
1¼ "	167
1 "	129
Total during the year	7481

WATER RATE COLLECTIONS.

The gross receipts from all water rents and taxes collected during the year, amounted to $476,968.24.

WATER METERS.

The number of establishments rated by water meters attached has quite largely increased during the year. Five hundred and thirty were in operation at its close, all being of the kind known as the "Worthington Meter." It speaks well for the durability of this meter, that those first purchased in 1860, are still in use and in good condition.

The numbers on hand, of each size, are as stated below:

⅝	inch	Meters,	118
1	"	"	190
1½	"	"	85
2	"	"	84
3	"	"	49
4	"	"	4
		Total number of meters,	530

The total quantity of water pumped during the year was 6,801,146,720 gallons. The amount delivered to consumers through meters was 659,615,000 gallons, an amount equal to, or somewhat exceeding the supply to the whole city in 1855.

The revenue obtained from meter rates during the year was $98,830, equaling the water tax collected from the entire city during the year 1857.

CONDENSED STATEMENT OF EXPENDITURES.

The following exhibits give a brief summary of the cost, during the year, of the additions to the Water Works and of their maintenance. It should be remarked that the amount of the item "repairs of pipes," etc., is largely increased by the substitution of larger pipes in the older parts of the city for those found too small; by the multiplication of the number of stop-cocks, so as to reduce the size of the districts, and to lessen, proportionately, the inconvenience from shutting off the water for repairs, etc.; by doubling up the number of hydrants in the older parts of the city; by the many and expensive changes made necessary by the great amount of street improvements in progress; and by the outlay caused by the accident to the Chicago Avenue main. The cost of the pipe laying is also made much larger than usual for the number of miles laid, for the reason that it includes a very large proportion of twenty-four inch and other supply mains, and also because the distributing pipes now laid have less of the smaller and more of the larger sizes than heretofore.

INTEREST, EXPENSES AND SURPLUS REVENUE.

Expenses at the Pumping Works,.....	$81,185.06
Lake Tunnel,—keeper, use of tugs, etc.,.....	2,753.21
Repairs of Pipes, Hydrants, etc., and miscellaneous operating expenses,.....	65,054.55
Water Meters, repairs, depreciation, and operating expenses,.....	3,595.72
Salaries of Board and officers, office rent and expenses and all salaries and expenses pertaining to the Water Office and the assessment and collection of water rates,.....	37,142.62
Interest on Water Loan Bonds, including $4,279.22 transferred from discount account,.....	200,412.93
Total interest and operating expenses,.....	$390,144.09
Income from Water Rates, as stated above,.....	$476,968.24
Deduct interest and expenses,.....	390.144.09
Surplus Revenue,.....	$ 86,824.15

COST OF ADDITIONS TO THE WORKS DURING THE YEAR.

31 $\frac{8}{10}\frac{8}{10}\frac{4}{10}$ miles of pipes of all sizes, from 4 in. to 24 inch, cost as laid, including tunnels under river for water mains,.....	$514,652.54
New Engines, sundry miscellaneous expenses,....	706.04
New Engine House, balances to contractors, etc..	10,272.37
Water Works Tower, " " ..	4,095.57
New Inlet,.....	1,295,03
Total cost of additions during the year,.....	$531,021.55

COST OF THE WORKS, APRIL 1ST, 1870.

Cost of the Water Works, including all expenditures on works in progress, March 31st, 1870, $3,677,404.69.

MEANS BY WHICH THE WORKS HAVE BEEN PAID FOR.

Water Loan Bonds, 6 per cent., $1,030,000.00, deducting for discount, $38,358.88.....	$991,641.12
Water Loan Bonds, 7 per cent.....	2,290,000.00
Balance from water rents.....	395,763.57
	$3,677,404.69

SEWERAGE WORKS.

The extent of sewers laid last year largely exceeds that of any previous year, amounting to about twenty-six and one-half miles.

The most important structure of this year's work was the Douglas Place sewer, of about a mile in length, and extending from State street to the lake. This sewer will be the outlet of the sewerage of all that part of the city south of Thirty-first street, and between Clark street and Lake Michigan. Being of the largest size, six feet in diameter, and constructed through wet sand, much of the way with a depth of cutting of twenty feet, it is a matter of congratulation that the work was accomplished in a substantial and satisfactory manner, and without accident to the work itself or to adjacent buildings. The cost, about $100,000, differs not largely from that of the same extent of the Lake tunnel for the Water Works.

In the appended report, giving in detail the sewerage work of the year, it is remarked that "the effect of the raising to grade and paving of the streets, in diminishing the cost of both the repairs and cleansing of the sewers, begins to be apparent. Notwithstanding the great increase in the extent of the sewers, the cost of repairs is one-third less than for the previous year, while the cleansing account is nearly one thousand dollars less."

LENGTH AND COST OF SEWERS LAID DURING THE YEAR.

South Division,	37,173 feet	costing,	$218,266.77	
West "	73,408 "	"	314,971.65	
North "	29,124 "	"	120,902.84	
Total	139,705 feet or 26 miles, and 2,425 feet, costing		$654,141.26	

The total length of sewers laid March 31st, 1870, was 136$\frac{1414}{1760}$ miles.

SEWER CLEANING.

Cost of cleaning Sewers and Catch Basins during the year.....$26,015.68

SEWER REPAIRS.

Cost of the repairs of Sewers and Catch Basins, and the renewal and repairs of man-hole covers during the year..... $7,527.16

PRIVATE DRAINS CONNECTING WITH PUBLIC SEWERS.

As remarked, last year, in order to insure the putting in of drains in advance of the laying of pavements, the Board have heretofore caused such drains to be laid and to be paid for from the Sewerage Fund. Subsequently assessments for such expenditures are levied, and such payments eventually refunded. The following enumeration of permits issued during the year for such drains, includes many, therefore, for which the permit charge is yet to be collected. The charge for permit for an ordinary six-inch connection is five dollars.

South Division, permits issued.....	830	
West " " "	2,110	
North " " "	1,039	
Total.....	3,979	
Total receipts from sewerage permits.....		$12,639.27

SEWERAGE EXPENSES, REPAIRS AND INTEREST.

Interest on sewerage loan bonds	$153,634.63
Sewerage Sinking Fund, amount set aside, tax of 1868	31,069.20
Salaries, office rent, and office and miscellaneous expenses	18,464.07
Repairs and cleaning of sewers as above	33,542.84
Total cost for the year	$236,710.74

SEWERAGE LOAN BONDS.

Six per cent. bonds outstanding March 31st, 1870,	$ 87,000.00
Seven " " " " "	2,538,000.00
Total of sewerage bonds outstanding March 31st, 1870	$2,625,000.00

Authority was given to issue but 175,000 more of bonds, so that the maximum of the sewerage debt, as determined by the recently adopted constitution, will be $2,800,000. This debt will be annually lessened by the accumulations of the sinking fund. As the means heretofore for the construction of sewers have been wholly derived from the issue of bonds, it will be necessary to obtain legislation at the coming meeting of the General Assembly to provide for the cost of sewers in some way which shall not add to the city's indebtedness.

SEWERAGE SINKING FUND.

The condition of the fund April 1st, 1870, was as follows:

Balance in the hands of the City Treasurer.....	$70,369.73
Mortgage ordered foreclosed, not yet collected.....	5,922.10
Amount not yet applied to canceling bonds.....	$76,291.83

Forty bonds were canceled last year, making the total amount to March 31st, 1870, purchased and canceled, $200,000.00.

DEEPENING OF THE ILLINOIS AND MICHIGAN CANAL.

The work of deepening the canal was prosecuted successfully throughout the year. During the winter the Rock Sections, numbers 45 to 64 inclusive, and extending about eight miles from Lockport this way, were completed. Strenuous efforts are made for as speedy a completion of the whole work as shall be practicable. It is the expectation of the Board that it will be finished by March 31st, A.D. 1871, at which time the contracts expire.

We give below a statement of the quantities of work done:

Earth excavations.....	568,663	cubic yards.
Rock "	81,387	"
Retaining wall, ...	444	"
Rip-rap wall, ...	5,535	"

The State of Illinois is now building a dam across the Illinois river and a lock at Henry; and the United States is dredging out some of the bars below Henry. With these works finished, and the deepened canal, there may be reasonably expected a large addition to the business and revenues of the canal.

The deepening of the canal will make the property adjacent to it and near Bridgeport, valuable as dock property. As the work has been done by the city, and as it is invested with a lien upon the canal and its revenues, for the re-imbursing of the cost of the deepening, the profits arising from this change in the character of the property should to a great extent accrue to the city. The Board would invite your consideration as to whether steps should not be taken to secure this benefit to the city. With a careful use of the revenues to be obtained from the canal property, the Board believe that the deepening will not only be of benefit to the city as a sanitary measure, but that it will eventually be repaid for its cost.

CLEANSING OF THE RIVER BY PUMPING INTO THE CANAL.

The pumps at Bridgeport were used at intervals during the summer, and until as late as November 15th, the time of closing the canal, and the river thus maintained in a sufficiently cleanly state. The cost of pumping for the season amounted to $15,499.58.

CLEANSING OF THE NORTH BRANCH.

It was not anticipated, when the scheme of deepening the canal was adopted, that its effects in changing the water in the river would be felt materially in the North Branch.

It is hardly necessary to say that the work of flushing and cleansing is needed quite as much there as in the other parts of the river. It should, however, be stated that its generally uncleanly state is due but to a small extent to the amount of sewage discharged into it, but mainly to the large amount of refuse and waste allowed to find its way into it from the distilleries and other large manufacturing establishments along its banks. Few sewers have their outlets in the North Branch, and the discharge from them is not large.

The early completion of the canal, it is believed, will soon suffice to maintain the main river and South Branch in good condition. The Board are of the opinion that it is not wise or safe to further postpone the entering upon some efficient plan for keeping clean the North Branch. Their attention, for a considerable time, has been given to the consideration of what means seemed most likely to accomplish the object. From the remark made above, it would seem evident that whatever plan be adopted, every effort should be made to keep out of the river the wash and waste unlawfully allowed to enter it from the establishments referred to, so that the city should be required to remove only the effects of its own sewage. For flushing out the river, but one of the many schemes proposed seems to them to promise to be effectual and worthy of adoption—that is, the construction

of a canal, open or covered, between the lake and the North Branch, through which the water shall be forced by mechanical means, either into the river or lake, as shall at the time be necessary. The location of this canal, and the details of its construction, the Board do not undertake to present in this report.

For its more thorough investigation, the Board respectfully invite the attention of your honorable body to the remarks of the City Engineer on this subject, as embodied in his appended report.

CHICAGO HARBOR.

The expenditures by the city for several years have been confined to the maintenance of the channel and harbor within the bar. Much anxiety was caused in the earlier part of the year from the lack of water at numerous places in the channel of the river, so much so that the Board deemed it necessary to report specially the state of facts to your honorable body, and to urge that immediate appropriation be made for dredging and deepening as should be found necessary.

The work of dredging was, however, prosecuted continuously, and no serious interruption occurred to the navigation of the harbor. The amount thus expended was $56,035.73.

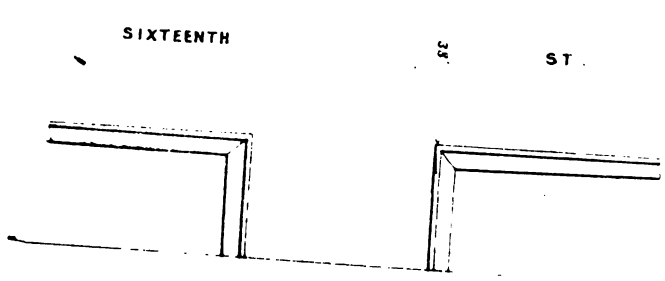
WASHINGTON AND LA SALLE STREET TUNNELS.

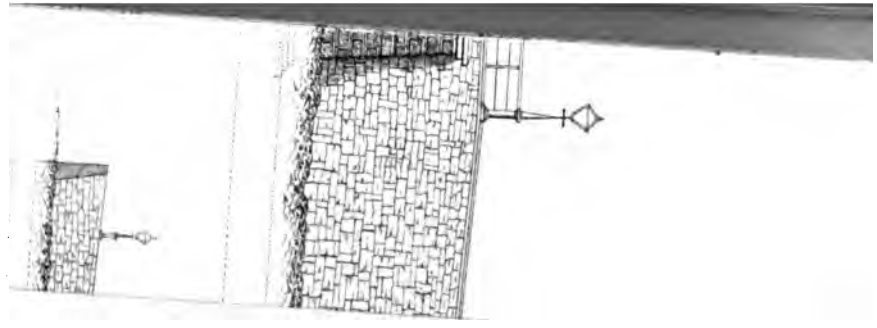
At the beginning of the year now reported on, Washington Street Tunnel had become a gratifying success. The work was substantially completed, and save some annoyance from a troublesome leak which manifested itself in the carriage-way, under the river, was found to fully answer all expectations concerning it.

It then became a matter of consideration as to where the next tunnel should be made, and, under instructions from the Council, the Board submitted plans for one under the main river at La Salle street, and one under the South Branch at Adams street. The pressing necessities for a connection between the North and South Divisions, led to the adoption of La Salle street as the locality for the work. Immediately with the reception of your orders for its construction, the Board proceeded to prepare plans and specifications for the work in full, and soon after to invite proposals for its execution. On the 20th of October the contract was awarded to Mr. Rob't E. Moss, at a price estimated on the quantities and prices of the various kinds of work to be done, of $427,044.46. The lateness of the season when the contract was awarded was unfavorable to making great progress during the winter, especially on the masonry of the tunnel, but the work was vigorously and successfully prosecuted by the contractor from the start. On the 5th of February, the coffer-dam having been previously finished and pumped out, and sufficient progress made in the excavation, the masonry of the tunnel was commenced in the bed

of the river, and has since been carried forward without i
tion. By the terms of the contract the work is to be
by July 1st, 1871, and the progress made warrants the
tion of its being completed in time.

Washington Street Tunnel has been in use throug
year. The leak referred to has been remedied. The p
way is perfectly dry. The carriage way is very nearly
the trouble from water, excepting what pertains to the d
is limited to an occasional drop from the arch overhea
diately under the river.


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Railway tracks are laid in the city across some of its finest streets and avenues, and on even grade with those streets, and trains at frequent intervals are passing and repassing where the throng of vehicles and pedestrians is greatest. The dangers from collisions at these crossings are such as to excite constant apprehension, and the interruptions of travel are serious and annoying. It is evident that some means must speedily be taken to remedy these evils. For these reasons the Halsted street viaduct is of value to the public generally, as showing how far such a structure is an effectual cure to the evils referred to, and to what extent it is objectionable. Its cost was borne by the Chicago, Burlington & Quincy Railroad Company, excepting that the abutting property was assessed the same amount as if the street had been walled, filled and paved in the usual manner.

A profile view of the Halsted street viaduct accompanies this report.

The cost of new street improvements being mainly paid for by special assessments on property contiguous to such streets, the most complete view of such work — including, however, all improvements paid for in the same manner — is given in the report of the special assessment department as presented herewith. By this report it will be seen that the general fund, or the city at large, bore the cost of the various improvements therein specified, to the amount of $397,002.06, while there was assessed on the property specially benefited, the sum of $2,836,852.48.

SPECIAL ASSESSMENT DEPARTMENT.

CHICAGO, *April* 1, 1870.

MR. A. W. TINKHAM,
Secretary Board of Public Works.

SIR: Accompanying this, please find a tabular statement of the street improvements and their estimated cost, for which assessments have been made during the year ending April 1st, 1870, to which is appended a summary, showing, among other things, the cost of the various improvements in each of the Divisions of the city, the total amount for which special assessments have been made each year for the last nine years, the number of miles of the different kinds of street improvements, and an alphabetical list of all the streets in the city and their length.

STATEMENT OF ASSESSMENTS FOR STREET OPENINGS AND WIDENINGS.

No. of War'ant	NAME OF STREET.	FROM	TO	Amount of Assessment.
605	Holt st.....	Bradley st.....	W. North av.....	$3,157 08
606	N. Leavitt st.....	W. North av.....	Milwaukee av.....	1,023 74
607	N.Leavitt st. thro'B	14 Ass'rs div. NE¼	E½ NW ¼, sec. 6.	100 00
608	Trustee st.....	Northern terminus	Hubbard st.....	1,700 00
629	Leavitt st.....	W. Harrison st....	W. Twelfth st.....	4,993 03
631	N. Hoyne st.....	W. Division st.....	Milwaukee av.....	2,095 00
676	Fifteenth st.....	Western terminus..	Clark st.....	5,422 95
726	Street run'g N. & S.	bet. Schil.& N.av.&	Wells and Franklin	11,274 09
730	Mitchell st.....	Waller st.....	Halsted st.....	39,820 50
791	N. Robey st. thro'	blks.11, 12, 13, Ass'rs	div. of unsubd. lnds	413 71
793	W. 12th& S.W'n av	Reuben st.....	present city limits.	27,442 86
808	Thirty-second st...	Forest av.....	Indiana av	15,826 84
862	Hurlbut st.....	St. Bk. Ill. subd. to	Clybourne av.....	17,325 90
978	Milwaukee av.....	present terminus..	Lake st.....	54,350 56
1061	Michigan av.....	Twenty-second st.	Thirty-second st..	75,533 08
1063	Seeley st.....	W. Van Buren st..	W. Tyler st.....	4,250 00
1064	Goethe st	N. Clark st.....	N. State st	29,150 00
1065	Franklin st.....	Madison st.....	Adams st.....	124,312 63
1068	St. from Vincennes Wahpanseh and	Road to Cottage Egan avs..... ...	Grove av. between	7,633 70
1069	Reuben st.....	W. Tyler st.....	W. Twenty-sec. st.	34,505 44
1071	Wentworth av....	Twenty sixth st...	Twenty-seventh st.	7,190 00
		Total.....		$467,521 11

STATEMENT OF ASSESSMENTS FOR ALLEY OPENINGS AND WIDENINGS.

No. of Warr't		Amount of Assessments.
593	Opening alley from Goethe to Division st., and bet. La Salle and N. Clark st	$5,626 00
604	Opening alley through bl'k 44, Sch. Sec., Van Buren to Tyler st, and bet. Clinton and Jefferson sts	2,580 77
630	Opening alley through bl'k 54, Sch. Sec., bet. Canal and Clinton sts	819 83
665	Opening alley through bl'k 2, McGrath's add, Robey to Hoyne st., and between Taylor and Harrison sts	578 95
667	Opening alley through W. ½ bl'k 97, W. ½ sec. 27	852 18
668	Widening alley through bl'ks 135 and 136 Sch Sec.	2,648 07
792	Opening alley running E. and W, in N. part of bl'k 47, Sec. 7, T. 39, R. 14	1,294 48
1,067	Widening and opening alley in bl'k 4, Original Town,	5,916 84
1,070	Opening alley through bl'k 16, Johnston, Roberts and Storr's add	4,130 00
1,073	Opening alley from Grant to Schiller st., bet. N. Clark and N. La Salle sts	4,821 61
1,076	Opening alley running E. and W. through W. part of bl'k 29, Johnston, Roberts and Storr's add	291 54
	Total	$29,560 27

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT.

No. of Warr'nt	NAME OF STREET.	FROM.	TO.	Amount of Assessment.
602	Indiana av.....	Twenty-second st..	Twenty-ninth st...	47,772 96
603	W. Van Buren st..	S. Branch Chi. riv.	Canal st.....	11.453 60
628	Clybourn av.....	Division st.....	North av.....	73,269 96
642	W. Van Buren st..	Halsted st.....	Loomis st.....	43,260 27
659	Archer av.....	State st.....	Canal or Slip.....	80,278 14
666	Washington st. ...	State st.....	Michigan av.....	1,612 16
669	Harrison st.....	State st.....	Wells st.....	12,217 99
670	Clinton st.....	W. Lake st.....	W. Kinzie st.....	22,086 04
672	Wabash av.....	Randolph st.....	Twenty-second st..	5,501 96
673	Central av.....	72 feet S. of Lake st.	140 feet S. of Lake.	,584 29
674	W. Twelfth st. ...	Halsted st.....	685 feet E. of Beach.	56,935 40
678	Jackson st.....	State st.....	Market st.....	16,237 57
679	W. Madison st.....	Centre av.....	Robey st.....	74,905 71
689	W. Lake st.....	Reuben st.....	Western av.....	102,953 12
715	Desplaines st.....	W. Van Buren st..	W. Harrison st....	19,140 85
719	W. Lake st.....	E. line B. 29, O. T.	Halsted st.....	10 071 89
720	S. Park av.....	Twenty-second st..	Twenty-ninth st...	43,646 33
721	Griswold st.....	Van Buren st.....	Polk st.....	3,037 00
722	Dearborn st.....	Monroe st.....	Jackson st	28,484 31
723	N. Halsted st.....	W. Lake st.....	W. Indiana st.....	33,313 27
724	N. LaSalle st.....	Chicago av.....	Division st	29,047 08
725	Huron st.....	N. Wells st.....	Townsend st.....	18,519 47
727	Clinton st.....	W. Van Buren....	W. Harrison st ...	21,289 97
728	Chicago av.....	N. Clark to E. line.	B. 53 Kinzie Add..	24,028 71
749	Archer av.	Canal or Slip.....	Halsted st.....	32,044 29
774	Griswold st.....	Jackson st.....	Van Buren st.....	7,287 60
775	Ohio st.....	N. Clark st.....	Kingsbury st.....	50,724 25
777	Sherman st.....	Jackson st	Van Buren st.....	8,026 78
779	Dearoorn place....	Randolph st.....	Washington st.....	3,009 76
781	N. Market st	Kinzie st..... ...	Chicago av.....	42,346 96
782	Aberdeen st.....	W. Madison st.....	W. Harrison st....	30,401 57
786	Fourteenth st.....	Michigan av.....	State st.....	7,200 01
794	North av.....	N. Wells st.....	N. Br'ch Chi. riv..	79 043 64
816	Canal st.....	W. Sixteenth st....	W. Eighteenth st...	17,884 22
818	N. Wells st.....	Division st.....	N. Clark st.....	75,755 74
859	Washington st.....	State st.....	Franklin st.....	22,533 18
860	Jefferson st.....	W. Van Buren st..	W. Harrison st....	20,272 01
861	N. Sangamon st...	Fulton st.....	Milwaukee av.....	41,125 54
863	W. Polk st.....	Halsted st.....	Elsworth st.....	43,428 90
864	Canalport av.....	Canal st.....	Halsted st.....	42,863 21
942	Union st.....	W. Madison st.....	Milwaukee av.....	47,018 00
943	Indiana st.....	St. Clair st.....	N. Clark st.....	27,536 25
952	Erie st	N. Br'ch Chi. riv..	Pine st.....	93,132 77
954	Quincy st.....	State st.....	Clark st..... ...	11,872 07
			Forward,	$1,483,154 80

STATEMENT OF ASSESSMENTS FOR WOODEN BLOCK PAVEMENT. (CONTINUED.)

No. of Warrnt.	NAME OF STREET.	FROM.	TO	Amount of Assessment.
			Forward	$1,483,154 80
955	Chicago av.....	N. Clark st.....	N. Br'ch Chi. riv..	5,855 93
956	Halsted st.....	Harrison st.....	C.B.&Q.R. cross'ng	428 39
957	Halsted st.....	Lake st.....	Harrison st.....	14,068 99
979	Clark st.....	Chicago river...	Chicago av.....	8.446 44
980	Polk st.....	State st.....	S. Br'ch Chi. riv...	12,726 45
981	Park av.....	Reuben st.....	Leavitt st.....	44,602 20
982	Twenty-second st.	State st.....	200 ft. W. of Grove.	60 940 67
983	W. Madison.....	Robey st.....	Western av.....	32,452 19
984	W. Indiana.....	Rucker st.....	Noble st.....	18.780 43
985	W. Harrison st...	Canal st..... ...	Halsted st.....	33,675 43
986	Sherman st.....	Harrison st.....	Taylor st.....	27,963 20
1062	Calumet av.....	Twenty-first st...	Cottage Grove av..	24,357 95
1072	Illinois st.....	N. Wells st.....	N. State st.....	25,604 28
1074	Monroe st.....	State st.....	Clark st.....	6,977 12
1077	Canal st.....	W Lake st.....	W. Madison st.....	443 05
	Total.....			$1,800,477 52

STATEMENT OF ASSESSMENTS FOR MISCELLANEOUS STREET AND ALLEY IMPROVEMENTS.

No. of Warr'nt	NAME OF STREET.	Amount of Assessments.
671	Curbing and filling Illinois st. from N. Wells st. to Kingsbury st.	$16,273 15
675	Macadamizing Blue Island ave. from W. 12th to W. 22d st.	8,975 98
677	Straightening alley in bl'k 5, H. O. Stone's sub div. of Astor's addition	426 48
707	Grading & planking Throop st. fm 22d st. to Blue Island av.	7,746 64
709	Curbing, filling and planking alley in bl'k 15, Kinzie's addition to Chicago	1,030 37
710	Grading Ridgeville rd. from W. North av. to Bloomingdale road	171 83
711	Grading Commercial st. from W. North av. to Bloomingdale road	171 83
712	Filling and planking alley in bl'k 53, Sch. Sec. add. to Chicago	1,485 89
713	Grading Wabansia av. from Hewes st. to N. Wood st.	209 26
714	Grading Edgar st. from Wabansia av. to Bloomingdale rd.	128 10
729	Curbing & filling Wesson st. fm. Chicago av. to W. Oak st.	4,949 77
731	Curbing, filling and grading Division st. from Clybourn av. to Division street bridge	7,367 81
776	Curbing and grading Clybourn place from Clybourn av. to Elston road	3,528 38
778	Curbing and filling W. Monroe st. from Canal st. to Halsted st.	21,511 20
783	Filling, grading and planking alley running E. and W. through S. ½ of bl'k 51, sec. 7, T. 39, R. 14	2,015 62
784	Curbing, filling and planking alley running N. and S. through bl'k 22, frac. sec. 15 add	861 97
785	Grading and planking alley in bl'k 4, Union Park add.	1,100 35
787	Curbing & filling W. Jackson st. fm. Canal st. to Halsted st.	19,353 14
788	Curbing, filling and planking alley from Chicago av. to W. White st. between Sedgwick and Townsend sts.	4,745 37
789	Curbing, grading and planking alley running N. and S. through bl'k 14, frac. sec. 15 addition	233 34
790	Filling, curbing and planking Calhoun place in bl'k 53, Original Town	409 28
817	Curbing and filling Clark st. from 12th st. to 22d st.	69,150 29
840	Curbing, filling and planking Marble place from State st. to Clark st.	2,241 79
841	Grading and planking alley running N. and S. through bl'k 12, Duncan's add.	986 87
842	Re-planking Couch place, in bl'k 34, Original Town.	472 22
935	Macadamizing W. 12th st. fm. Reuben st. to S. Western av.	13,713 75
936	Filling Centre av. from Mitchell st. to Lumber st.	2,871 66
937	Curbing, filling and planking alley in bl'k 25, Sch. Sec. add. to Chicago	2,233 19
938	Curbing and filling 4th av. from Taylor st. to 12th st.	9,313 28
939	Curbing and filling W. Division st. from Milwaukee av. to N. branch of Chicago river	28,739 78
	Total	$232,418 59

STATEMENT OF ASSESSMENTS FOR MISCELLANEOUS STREET AND ALLEY IMPROVEMENTS. (CONTINUED.)

No. of Warr't	NAME OF STREET,	Amount of Assessments.
	Forward....	$232,418 59
940	Grading and macadamizing N. Halsted st. from N. branch of Chicago river to Division st	6,564 85
941	Curbing, filling and macadamizing Larrabee st. from Chicago av. to Clybourn av	25,682 10
944	Grading and graveling N. Halsted st. from Division st. to North av	9,382 39
945	Grading and planking alley running N. and S. through bl'k 8, frac. sec. 15	1,033 80
951	Grading and planking N. Branch st. from Halsted to Division st	8,940 04
953	Curbing, filling and planking alleys in bl'k 45, S. E. ¼ sec. 21, T. 39, R. 14,	3,534 85
958	Grading and cindering Noble st. from Milwaukee av. to W. Clybourn place	1,639 63
987	Curbing, filling and planking Calhoun place, bl'k 55, Original Town	304 80
1,066	Curbing, grading and cindering Clybourn av. from North av. to Clybourn place	5,518 02
1,075	Curbing, grading and planking alley running N. and S. through bl'k. 5, frac. sec. 15 add	1,936 53
	Total	$296,955 60

STATEMENT OF ASSESSMENTS FOR THE ERECTION OF LAMP POSTS.

No. of Warrnt.	No. posts	NAME OF STREET.	FROM	TO	Amount of Assessment.
595	12	Blue Island av....	W. Harrison st...	W. 12th st.....	$ 499 50
596	22	W. Harrison st...	Halsted st.....	Aberdeen st.....	747 00
597	20	Fulton st.....	Morgan st.....	N. Ada.....	684 00
598	9	Clinton st.....	W Madison st...	W. Jackson st....	324 00
599	8	W. Adams st.....	Reuben st.....	Loomis st.....	288 00
600	2	W. Jackson st....	Sangamon st.....	Morgan st.....	72 00
601	21	Polk st.....	Centre av.....	Blue Island av...	756 00
632	2	Jefferson st.....	De Koven st.....	W Taylor st	72 00
633	5	Reuben st.....	Jackson st.....	Van Buren st....	180 00
634	14	Jackson st.....	State st.....	Market st.....	504 00
635	5	Reuben st.....	Washington av...	Fulton st.....	180 00
636	3	Throop st.....	W. Adams st.....	W. Monroe st....	108 00
637	3	Laflin st.....	W. Adams st.....	W. Monroe st....	108 00
638	6	Washington av...	Wood st.....	N. Lincoln st....	216 00
639	13	Centre st.....	Hurlbut st.....	N. Franklin st...	463 50
640	6	Hubbard st.....	Paulina st.....	Page st.....	216 00
641	27	W. Indiana st.....	Morgan st	Noble st.....	904 50
751	5	Grant place.....	Larrabee st.....	Hurlbut st.....	180 00
752	3	Pine st.....	Michigan st.....	Chicago av.....	108 00
753	21	Canal st	18th st.....	Harrison st.....	1,048 95
754	5	Franklin st.....	Madison st.....	Randolph st. ...	191 25
755	5	Belden av.....	Hurlbut st.....	N Clark st.....	180 00
756	5	Peck st.....	Depot st.....	Fulton st.....	180 00
757	9	W. 12th st.....	Centre av.....	125 ft W of Throop	324 00
758	10	Townsend st.....	Oak st.....	Division st.....	360 00
759	5	Reuben st.....	W. Lake st.....	Fulton st.....	180 00
760	8	Lake av.....	Douglas place ...	Wahpanseh av...	288 00
761	2	North av.....	N. La Salle st....	N. Clark st.....	72 00
762	8	Paulina st.....	W. Kinzie st.....	W. Indiana st....	288 00
763	4	Hurlbut st.....	Grant place.....	Belden av.....	144 00
764	8	Crosby st.....	Hobbie st.....	Larrabee st.....	288 00
765	7	Larrabee st.....	Crosby st.....	Chicago av.....	252 00
766	6	Wendell st.....	Sedgwick st.....	N. Franklin st...	216 00
795	3	28th st.....	Wabash av.....	State st.....	108 00
798	3	Sophia st.....	N. Franklin st...	N. Clark st.....	108 00
809	4	Lincoln st.....	W. Madison st...	W. Lake st.....	144 00
810	7	La Salle st.....	North av.....	N. Clark st.....	252 00
814	11	Prairie av.....	31st st.....	33rd st.....	425 70
815	4	Indiana av.....	32 d st.....	33rd st.....	144 00
820	14	Kankakee av.....	29th st.....	31st st.....	541 80
821	3	Madison st.....	State st.....	Wabash av.....	108 00
823	3	13th st.....	Michigan av.....	Wabash av.....	108 00
833	14	N Wells st... ...	North av	Lincoln st.....	495 00
834	5	Wahpanseh av....	Cottage Grove av.	Lake st.....	180 20
837	9	Lincoln av.....	N. Franklin st...	Sedgwick st.....	324 00
857	16	Franklin st.....	Adams st.....	Harrison st.....	558 00
		Amount forward.			$14,119 20

STATEMENT OF ASSESSMENTS FOR THE ERECTION OF LAMP POSTS. (CONTINUED.)

No. of Warr't	No. posts	NAME OF STREET.	FROM	TO	Amount of Assessment.
				Forward....	$14 119 20
865	6	W. Lake st.....	Oakley st.....	Western av.....	234 00
866	11	W. Van Buren st..	Aberdeen st.....	Throop st.....	385 00
867	11	W. 22nd st.....	Morgan st.....	Centre av.....	429 00
868	9	W. Indiana.....	N. Desplaines st..	N. Halsted st....	351 00
869	23	Canalport av.....	Halsted st.....	Canal st.....	740 00
870	3	South-western av.	At inte:sec'n with	W. Washington st	117 00
871	4	W. Van Buren st..	Canal st.....	Chicago river....	156 00
872	1	Sheldon st.....	W. Madison.....	W. Washington st	39 00
873	7	Fulton st.....	125 ft.N. of Hoyne	Robey st.....	273 00
874	5	Luke st.....	John st.....	Halsted st.....	195 00
875	2	Jefferson st.....	W. 12th st.....	Dussold st.....	78 00
876	5	Walnut st.....	Wood st.....	Lincoln st.....	195 00
877	8	W. Monroe st....	Leavitt st.....	Hoyne st.....	312 00
878	4	Carroll st.....	Halsted st.....	Union st.....	156 00
879	1	Elm st.....	Clark st.....	La Salle st.....	38 70
880	4	W. Van Buren st.	Sangamon st....	Halsted st.....	154 80
882	7	Dearborn st.....	Monroe st.....	Jackson st.....	285 50
883	20	Vincennes av.....	Douglas place....	800ft.S.of Wahp'h	780 00
884	5	Egan av.....	Lake av.....	Ellis av.....	195 00
885	11	Ellis av.....	Wahpanseh av...	Egan av.....	429 00
886	7	29th st	State st.....	Indiana av.....	273 00
887	34	22nd st.....	Grove st.....	State st.....	1,129 00
888	8	31st st.....	S. Park av.....	Cottage Grove av.	312 00
889	5	W. Madison st....	Western av.....	Oakley st.....	195 00
890	25	W. Division st....	Milwaukee av....	Chicago river ..	850 00
891	7	Newberry st.....	W. 12th st.....	Maxwell st.....	270 90
892	2	Sherman st.....	W.Van Buren st.	Jackson st.....	78 00
893	4	29th st.....	S. Park av.....	Cottage Grove av	156 00
894	3	Aberdeen st.....	W. Van Buren st.	W. Jackson st....	117 00
895	3	26th st.....	Wabash av.....	State st.....	117 00
896	1	25th st.....	Michigan av.....	Wabash av.....	39 00
897	13	Sherman st.....	Taylor st.....	Harrison st.....	478 00
898	29	W. Chicago av....	Noble st.....	Wood st.....	974 00
899	1	W. Taylor st.....	109 ft.E.of Canal		39 00
900	7	Lytle st.....	W. 12th st.....	W. Taylor.....	312 00
901	1	De Koven st.....	109 ft. W of Canal		39 00
902	15	Warren av.....	Western av.....	Leavitt st.....	540 00
903	1	W. Lake st.....	N.W.cor. Peck st.		39 00
904	14	Hoyne st.....	W. Monroe st...	W. Van Buren st.	509 00
905	15	Sangamon st.....	Milwaukee av....	Carroll st.....	540 00
906	5	Hoyne st.....	W. Madison st....	W. Monroe st....	195 00
907	7	W. Washington st	Clinton st.....	W. Water st.....	332 00
908	12	31st st.....	Indiana av.....	S. Park av.....	464 40
909	3	W. Jackson st....	Reuben st	Marshfield st.....	117 00
910	10	Winchester av....	W. Madison st...	W. Jackson st...	385 00
911	8	Wahpanseh av....	Cottage Grove av	Vincennes av....	312 00
912	9	Polk st.....	State st.....	Chicago river....	320 00
913	16	N. State st.....	Oakwood st.....	Chicago av.....	496 00
914	10	Lake av.....	Oakwood av.....	Pier st.....	390 00
		Amount forward.....			$29,680 50

STATEMENT OF ASSESSMENTS FOR THE ERECTION OF LAMP POSTS. (CONTINUED.)

No. of Warr'nt	No. posts	NAME OF STREET.	FROM	TO	Amount of Assessment.
				Forward.....	$29,680 50
915	4	Wabash av.....	33rd st.....	32nd st.....	156 00
916	31	Archer av.....	Halsted st.....	State st.....	1,098 50
917	21	North av.....	Clybourn av.....	Chicago river....	726 00
918	7	14th st.....	Clark st.....	State st.....	297 99
919	31	Chicago av.....	Grover st.....	N.Br'ch Chi. riv..	1,036 00
920	7	Jefferson st.....	W. Van Buren st.	W. Harrison st...	273 00
921	17	Union st.....	W. Madison st...	Hubbard st.....	614 50
922	4	W. Adams st.....	Winchester av...	Robey st.....	156 00
923	5	33rd st.....	Cottage Grove av	Lake Shore av...	195 00
924	13	Milwaukee av....	Noble st.....	Division st.....	478 00
925	7	Langley st.....	Wabpansch av...	800 ft. S. Wabpan.	273 00
926	3	31st st.....	Wabash av.....	State st.....	117 00
927	4	Elm st.....	N. Clark st.....	N. State st.....	154 80
928	3	30th st.....	Wabash av.....	State st.....	117 00
929	16	Ontario st.....	Kingsbury st....	N. Wells st.....	571 00
930	4	29th st.....	Calumet av.....	S. Park av.....	154 80
931	3	31st st.	Cottage Grove av.	Cottage place....	117 00
932	2	Washington st....	Franklin st.....	La Salle st.....	103 00
933	4	25th st.....	Wabash av.....	State st.....	144 00
934	6	Cass st.....	Chicago av.....	Hinsdale st.....	234 00
946	2	La Fayette place..	Clark st.....	Dearborn st.....	77 40
947	1	Ontario st.....	N. Clark st.....	N. Dearborn st...	49 95
948	2	24th st.....	Wabash av.....	Michigan av.....	78 00
949	2	Chicago av.....	Rush st.....	Pine st.....	77 40
950	1	Dearborn place...	Washington st...	Randolph st.....	39 00
959	1	28th st.	120 feet East of..	Wabash av.....	39 00
960	2	W. Jackson st....	Clinton st.....	Canal st.....	78 00
961	1	12th st.....	100 feet West of..	State st.....	39 00
962	2	Prairie av.....	Cottage Grove av	24th st.....	78 00
963	2	Quincy st.....	Clark st.....	Dearborn st.....	78 00
964	1	Oak st.....	N. Clark st.....	N. Dearborn st..	38 70
965	2	Griswold st.....	Jackson st.....	Van Buren st....	78 00
966	1	Calumet av.....	24th st.....	Cottage Grove av	39 00
967	2	26th st.....	Michigan av.....	Indiana av.....	78 00
968	9	S. Park av.....	24th st.....	Cottage Grove av	351 00
969	1	Cottage Grove av.	132 feet South of..	Wabpansch av...	39 00
970	1	23rd st.....	127 feet West of..	Wabash av.....	39 00
971	11	Huron st.....	N. Wells st.....	Townsend st.....	416 00
972	12	W.Polk st.....	Canal st.....	Chicago river....	447 00
973	9	Granger st.....	N. Wells st.....	Sedgwick st.....	351 00
974	5	N. Halsted st.....	W. Chicago av...	Chicago river....	195 00
975	5	Cottage place.....	31st st.....	650 ft. S. thereof..	195 00
976	9	Myrick av.....	31st st.....	29th st.....	351 00
977	10	W. Polk st.....	Halsted st.....	Desplanes st, ...	385 00
				Total.....	$40,333 54

STATEMENT OF ASSESSMENTS FOR LAYING PRIVATE DRAINS.

No. of Warr't	NAME OF STREET.	FROM	TO	Amount of Assessment.
799	N. Clark st.....	Division st.....	North av.....	$2,790 16
801	Randolph st.....	Michigan av.....	Chicago river.....	809 60
802	Eighteenth st.....	Wabash av.....	Chicago river.....	699 79
806	Madison st.....	Market st.....	State st.....	513 19
826	Polk st.....	State st.....	Chicago river.....	271 68
827	Fourteenth st....	State st.....	Wabash av.....	171 00
828	N. Dearborn st...	Schiller st.....	North av.....	971 02
829	N. Wells st.....	Kinzie st.....	Division st.....	728 10
831	Prairie av.....	Cottage Grove av..	Twenty ninth st....	1,745 00
836	Michigan av.....	Twenty-second st.	Twenty-ninth st....	1,827 31
838	Calumet av.....	Twenty-second st..	Cottage Grove av..	1,120 15
852	Halsted st.....	Archer av.....	Chicago river.....	526 80
854	N. Dearborn st...	Chicago river.....	North av.....	2,966 72
855	Twelfth st.....	State st.....	Chicago river.....	419 60
856	Indiana av.....	Twenty-second st..	Twenty ninth st...	1,043 50
858	Wabash av.....	Twenty-second st..	Twenty-ninth st...	2,359 29
1,043	Clinton st.....	W. Lake st.....	W. Kinzie st.....	890 68
1,044	Jefferson st.....	W. Randolph st...	W. Harrison st....	969 30
1,046	W. Washington st.	Green st.....	Elizabeth st.....	1,571 52
1,047	W. Adams st.....	Halsted st.....	Reuben st.....	2,878 96
1,048	Canal st.....	W. Twelfth st.....	W. Sixteenth st ...	955 52
1,049	Canal st.....	W. Madison st.....	W. Twelfth st.....	3,956 24
1,050	Twelfth st.....	State st.....	Michigan av.....	175 15
1,051	Clinton st.....	W. Van Buren st..	W. Harrison st....	620 67
1,052	W. Kinzie st.....	Halsted st.....	Chicago river.....	203 56
1,053	W. Lake st.....	Halsted st.....	Reuben st.....	5,436 40
1,054	Jackson st.....	Michigan av.....	Chicago river.....	614 75
1,055	Archer av.....	Stewart av.....	Ogden slip.....	492 28
1,056	Clinton st.....	W. Madison st.....	W. Van Buren st..	908 72
1,057	Halsted st.....	C. B. & Q R.R. cr'g	Chicago river.....	3,261 60
1,058	W. Washington st.	Chicago river.....	Green st.....	577 00
1,059	Harrison st.....	State st.....	Wells st.....	185 50
1,060	N. LaSalle st.....	Chicago river.....	North av.....	4,306 09
		Total.....		$46,966 85

STATEMENT OF ASSESSMENTS FOR LAYING WATER SERVICE PIPES.

No. of Warr't	NAME OF STREET.	FROM	TO	Amount of Assessment.
698	Huron st	N. Clark st	N. State st	$271 28
699	Ohio st	St. Clair st	Clark st	777 31
700	Sangamon st	W. Van Buren st	Fulton st	2,161 31
701	N. Wells st	Kinzie st	Chicago av	1,543 96
702	Division st	N. Clark st	Clybourn av	668 25
703	W. Kinzie st	Canal st	Halsted st	212 70
704	Canal st	W. Twelfth st	W. Sixteenth st	1,489 98
705	Harmon court	State st	Michigan av	268 82
706	Pine st	Michigan st	Chicago av	708 57
708	N. Clark st	Division st	North av	1,585 38
716	Clinton st	W. Van Buren st	W. Madison st	1,958 25
717	Washington st	Market st	Franklin st	108 19
718	Monroe st	Clark st	Market st	601 69
796	Madison st	State st	Chicago river	1,644 33
797	Wabash av	Twenty-second st	Twenty-ninth st	3,336 54
803	Eighteenth st	Wabash av	Chicago river	1,102 33
804	N. Wells st	Chicago av	Division st	847 76
811	Polk st	State st	Chicago river	588 68
812	Fourteenth st	State st	Michigan av	125 24
813	Twelfth st	Michigan av	Twelfth st. bridge	813 66
819	Desplaines st	W. Van Buren st	Fourth st	1,666 41
824	W. Lake st	Halsted st	Paulina st	5,279 99
835	Indiana av	Twenty-second st	Twenty-ninth st	1,589 27
839	Calumet av	Twenty-first st	Cottage Grove av	1,047 80
843	Madison st	Halsted st	Robey st	6,795 16
845	Jefferson st	W. Van Buren st	W. Randolph st	1,267 65
846	W. Adams st	Halsted st	Reuben st	2,929 52
848	W. Washington st.	W. Water st	Elizabeth st	2,756 40
849	Canal st.	W. Madison st	W. Twelfth st	2,927 33
988	Clinton st	W. Lake st	West Kinzie st	1,114 99
1,000	W. Lake st	Pauli a st	Western av	6,156 00
1,001	W. Harrison st	Canal st	Halsted st	1,432 15
1,002	Archer av	State st	Ogden slip	2,172 20
1,003	Dearborn st	Monroe st	Jackson st	773 00
1,004	Archer av	Ogden slip	Halsted st	3,358 00
1,005	Halsted st	Archer av	R. R. cr'g, at 16th st	1,622 83
1,006	Sangamon st	Fulton st	Milwaukee av	2,587 50
1,007	W. Indiana st	Desplaines st	Noble st	5,078 25
1,008	Milwaukee av	Elston road	W. Division st	4.731 00
1,009	Jefferson st	W. Van Buren st	W. Harrison st	1,023 00
1,010	W. Twelfth st	Halsted st	Beach st	3,786 25
1,012	Michigan av	Twenty-second st	Twenty-ninth st	6,085 50
1,013	Halsted st	W. Lake st	N. br. Chicago riv.	3,072 00
1,014	Market st	Kinzie st	Chicago av	1,699 00
		Amount forward		$91,765 42

STATEMENT OF ASSESSMENT FOR LAYING WATER SERVICE PIPES. (CONTINUED.)

No. of War.'nt	NAME OF STREET.	FROM	TO	Amount of Assessment.
			Forward	$91,765 42
1,015	Clybourne av....	Division st.....	North av.....	3,233 25
1,031	Chicago av.....	N. Clark st.....	E.line,B.50,Kin.add	655 50
1,032	N. La Salle st.....	N. Water st.	Division st.....	3,428 00
1,033	N. Dearborn st...	N. Water st.....	Division st	2,907 11
1,034	North av.....	N. Wells st.....	N. br. Chicago riv..	6,484 50
1,035	N. Dearborn st...	Division st.... ...	North av.....	2,553 21
1,036	Clinton st.....	W. Van Buren st..	Harrison st.....	802 00
1,037	Randolph st.....	Michigan av.....	Chicago river.....	1,955 26
1,038	Ohio st.....	Clark st	Kingsbury st.....	3,191 50
1,039	Desplaines st.....	W. Van Buren st..	W. Harrison st.....	1,195 00
1,040	W. Van Buren st.	Chicago river.....	Canal st.....	282 00
1,041	W. Madison st....	Robey st.....	Western av.....	5,804 25
1,042	Harrison st.....	State st.....	Wells st.....	144 13
1,045	W. Van Buren...	Halsted st.....	Loomis	5,680 50
		Total.....		$130,081 63

STATEMENT OF ASSESSMENTS FOR LAYING GAS SERVICE PIPES.

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessment.
767	Adams st.....	Halsted st.....	Reuben st.....	$617 40
768	Desplaines st.....	W. Van Buren st..	W. Lake st.....	279 75
769	Jefferson st.....	W. Randolph st....	W. Van Buren st....	255 35
770	W. Lake st.....	Halsted st....	Reuben st.....	500 35
771	N. Desplaines.....	Kinzie st.....	Fourth st.....	346 30
772	W. Van Buren st..	Halsted st.....	Canal st	290 75
773	Canal st.....	W. Harrison st.....	W. Sixteenth st.....	147 45
805	Halsted st.....	W. Sixteenth st....	Halsted st. bridge..	848 05
844	Clinton st.....	W. Madison st.....	W. Van Buren st..	321 65
		Total.....		$3,607 05

STATEMENT OF ASSESSMENTS FOR CONSTRUCTION OF SIDEWALKS.

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessment.
609	Shurtleff av.....	Twenty-sixth st...	Napoleon place ...	$131 40
610	Lake av.....	Douglas place.....	Egan av	189 45
611	Lincoln st.....	Lake st.....	Washington st.....	47 25
612	Wentworth av....	Sixteenth st.....	Thirty-first st.....	432 00
613	Butterfield st.....	Twenty-seventh st.	Thirty-third st....	353 70
614	Farrell st.....	Archer av.....	C. & St. L. R. R...	135 00
615	Indiana st.....	Lincoln st.....	Robey st...	86 40
616	Bonfield st.....	C & St.L.R.R.cross.	Hickory st.....	121 50
617	Joseph st.....	Archer av.....	Hickory st.....	236 34
618	Nineteenth st.....	State st.....	Blackwell st.....	145 35
619	Lock st.....	Archer av.....	Thirty-first st.....	148 95
620	Arnold st.....	Thirty-first st.....	Thirty-third st....	160 00
621	McGregor st.....	Butler st.....	Wentworth av.....	22 50
622	Deering st.....	Archer av.....	C. & St. L. R. R....	11 25
623	Twentieth st.....	Grove st.....	Wentworth av.....	56 25
624	Lytle st.....	Taylor st.....	Twelfth st.....	61 20
625	Henry st.....	Blue Island av.....	Eastern terminus of Henry st.....	454 95
626	Sanger st.....	Archer av.....	Twenty-sixth st...	108 23
627	Broad st.....	Archer av.....	Thirty first st.....	30 71
643	Loomis st.....	Twelfth st.....	Sixteenth street....	264 33
644	Lyman st.....	Main st.....	Deering st...	535 35
645	Bushnell st.....	Hanover st.....	Archer av.....	137 96
646	Centre av.....	Sixteenth st.....	Twenty-second st..	23 14
647	Rebecca st.....	Laflin st.....	Reuben st.....	32 04
648	Mitchell st.....	Blue Island av.....	Waller st.....	96 12
649	Oneida st.....	Laurel st.....	Halsted st.....	352 29
650	Centre av.....	W. Twelfth st.....	Blue Island av.....	95 23
651	Pitney st	Archer av..... ...	Thirty-first st.....	32 04
652	Purple st.....	Nineteenth st.....	Archer av.....	240 32
653	Hickory st.....	Main st.....	Deering st.....	122 57
654	Union st.....	Sixteenth st.....	Twenty-second st..	102 80
655	Catherine st.....	Centre av.....	Morgan st..... .	217 36
656	Thirty-first st.....	Halsted st.....	Wentworth av.....	766 45
657	Bryant st.....	Vincennes av.....	Moonaway place...	111 24
658	Forest av.....	Thirty-first st.....	Douglas place.....	233 61
660	Catherine st.....	Canal st	Stewart av.....	44 50
661	Wrong st.....	Main st.....	S. W. cor. lot 10, B. 24, sec. 29.....	120 15
662	Lancaster av.....	Benson st.....	Ullman st.....	121 04
663	Whiting st.....	Market st.....	Delavan's addition.	22 25
664	Brown st.....	Twelfth st.....	Sixteenth st.....	21 36
680	McHenry st.....	Blanch st.....	Wabansia av.....	109 02
681	State st.....	Douglas place	Egan av.....	890 22
682	Sampson st.....	Laflin st.....	Reuben st.....	266 11
			Amount forward.....	$7,879 94

STATEMENT OF ASSESSMENTS FOR CONSTRUCTION OF SIDEWALKS. (CONTINUED.)

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessments.
			Forward	$7,879 94
683	Twenty-fourth st.	Butler st	Clark st	432 21
684	English st	Centre av	May st	150 04
685	Tyler st	Centre av	Throop st	22 26
686	W. Eighteenth st.	Canal st	Halsted st	140 18
687	Holt st	Divisi n st	Bradley st	42 72
688	Northern av	Cottage Grove av	Illinois Central R R	72 53
690	Mitchell st	Laflin st	Reuben st	234 07
691	Hoyne st	W. Van Buren st	W. Harrison st	21 81
692	Clayton st	Centre av	May st	233 67
693	Thirty-first st	Deering st	Pitney st	218 27
694	Morgan st	Twelfth st	Sixteenth st	427 62
695	Archer av	Beers st	S. br. Chicago riv.	311 55
696	Hastings st	Laflin st	Reuben st	266 11
697	Dashiel st	Douglas place	Egan av	74 76
732	Rebecca st	Morgan st	Centre av	142 85
733	Sholto st	Eleventh st	Polk st	33 38
734	Shurtleff av	Thirty-first st	Thirty-third st	166 88
735	Wood st	W. Madison st	W. Van Buren st	125 94
736	Kinzie st	Elizabeth st	Western av	190 94
737	Ruble st	Sixteenth st	Eighteenth st	85 44
738	Dussold st	Jefferson st	Halsted st	134 85
739	W. Twelfth st	Laflin st	Reuben st	53 40
740	Wright st	Canal st	Stewart av	44 50
741	Coolidge st	Waller st	Blue Island av	60 97
742	Buddan st	Twenty-sixth st	Thirty-first st	282 12
743	W. Washington st.	Leavitt st	Western av	21 36
744	Hastings st	Reuben st	Wood st	96 12
745	Western av	W. Madison st	W. Van Buren st	200 25
746	Kossuth st	Wentworth av	Halsted st	1,218 40
747	Mitchell st	Reuben st	Paulina st	131 72
748	Catherine st	Throop st	Loomis st	10 68
800	Bunker st	Canal st	Beach st	186 01
807	Langley st	Egan av	Wahpanseh av	29 04
825	Paulina st	W. Jackson st	W. Madison st	46 73
822	Reuben st	Cornelia st	Division st	19 58
830	John st	Evans st	Twenty-second st	66 78
832	Asylum place	Hurlbut st	Halsted st	59 18
847	Wallace st	Douglas place	Esplanade st	170 88
850	Curtis st	Second st	May	26 70
851	Twenty-third st.	Stewart av	Buddan st	161 16
853	Evans st	Halsted st	John st	111 72
989	Catherine st	Loomis st	Wood st	459 24
990	Barber st	Canal st	Halsted st	327 60
991	Mitchell st	Loomis st	Paulina st	525 99
992	W. Harrison st	Centre av	Reuben st	743 07
993	W. Adams st	Reuben st	Laflin st	133 56
994	Seward st	Canalport av	Lumber st	85 01
995	Throop st	W. Taylor st	W. Twelfth st	144 58
996	String st	Canalport av	Sixteenth st	550 54
			Amount forward	$17,374 91

STATEMENT OF ASSESSMENTS FOR CONSTRUCTION OF SIDEWALKS. (CONTINUED.)

No. of Warr'nt	NAME OF STREET.	FROM	TO	Amount of Assessments.
			Forward	$17,374 91
997	Ann st.....	W. Kinzie st.....	Carroll st.....	126 38
998	Coolidge st.....	Blue Island av.....	Waller st.....	107 69
999	Gardner st.....	Vine st.....	Halsted st.....	13 85
1,011	Wabash av... ..	Thirty-second st...	Douglas place.....	89 04
1,016	Twenty-seventh st	Wentworth av.....	Stewart av.....	214 04
1,017	Reuben st.....	Harbine st.....	Madison st.....	396 50
1,018	W. Harrison st...	Canal st.....	Beach st.....	81 86
1,019	N. Branch st.....	Bliss st.....	Division st.....	107 23
1,020	W. Harrison st...	Lytle st.	Leavitt st.....	588 87
1,021	Fulton st.....	Leavitt st.....	Oakley st.....	97 46
1,022	W. Kinzie st.....	Reuben st.....	Paulina st.....	193 13
1,023	Emerald st.....	Douglas place.....	Egan av.....	360 90
1,024	Walnut st.....	Hoyne st.....	Oakley st.....	44 07
1,025	Cherry av	Bliss st.....	Division st.....	66 78
1,026	Ridgeville road...	Clybourn place....	North av..... ..	214 55
1,027	Clybourn place...	N. Br. Chicago riv.	Commercial st.....	375 14
1,028	Milwaukee av....	Wood st.....	North av.....	122 43
1,029	Ashley st.....	Wood st.....	Hoyne st	730 08
1,030	Thirty-third st...	Cottage Grove av..	Illinois Cent'l R. R.	44 50
		Total.....		$21,348 91

SUMMARY.

TOTAL ASSESSMENTS FOR STREET OPENINGS AND WIDENINGS.

North Division	$57,749 99	
South Division	235,919 20	
West Division	173,851 92	
		$467,521 11

TOTAL ASSESSMENTS FOR ALLEY OPENINGS AND WIDENINGS.

North Division	$20,785 99	
South Division	3,500 25	
West Division	5,274 08	
		29,560 27

TOTAL ASSESSMENTS FOR WOODEN BLOCK PAVEMENT, INCLUDING CURBING AND FILLING.

North Division	3.85 miles	$553,311 48	
South Division	6.61 "	464,311 79	
West Division	9.40 "	782,854 25	
			1,800,477 52

TOTAL ASSESSMENTS FOR MISCELLANEOUS STREET AND ALLEY IMPROVEMENTS.

North Division	$94,408 73	
South Division	85,957 30	
West Division	116,589 57	
		296,955 60

TOTAL ASSESSMENTS FOR ERECTION OF LAMP POSTS.

North Division	186 posts,	$ 6,673 45	
South Division	352 "	13,208 94	
West Division	554 "	20,451 15	
			40,333 54

TOTAL ASSESSMENTS FOR CONSTRUCTION OF PRIVATE DRAINS.

North Division	$11,762 09	
South Division	12,974 59	
West Division	22,230 17	
		46,966 85

TOTAL ASSESSMENTS FOR LAYING OF WATER SERVICE PIPES.

North Division	$30,554 58	
South Division	25,714 63	
West Division	73,812 42	
		130,081 63

TOTAL ASSESSMENTS FOR LAYING OF GAS SERVICE PIPE.

North Division		
South Division		
West Division	$3,607 05	
		3,607 05

TOTAL ASSESSMENTS FOR CONSTRUCTION OF SIDEWALKS.

North Division	$255 44	
South Division	9,782 16	
West Division	11,311 31	
		21,348 91
Total amount of assessments for the North, South and West Divisions		$2,836,853 48

NORTH DIVISION.

Total amount of assessments for street improvements	$775,501 75	
Total amount payable out of Appropriation Fund on account of same	104,357 44	
Total estimated cost of street improvements		$879,859 19

SOUTH DIVISION.

Total amount of assessments for street improvements	$851,368 86	
Total amount payable out of Appropriation Fund on account of same	101,600 65	
Total estimated cost of street improvements		952,969 51

WEST DIVISION.

Total amount of assessments for street improvements	$1,209,981 87	
Total amount payable out of Appropriation Fund on account of same	191,043 97	
Total estimated cost of street improvements		1,401,025 84
Total estimated cost of street improvements in the North, South and West Divisions		$3,233,854 54

TO BE PAID FROM APPROPRIATION FUND FOR STREET IMPROVEMENTS IN THE

North Division	$104,357 44	
South Division	101,600 65	
West Division	191,043 97	
Total		$397,002 06

Total number of Lamp Posts provided for by assessment:

IN THE NORTH DIVISION,

From April 1st, 1869, to April 1st, 1870	186	
Posts erected prior to April 1st, 1869	1027	
		1213

IN THE SOUTH DIVISION,

From April 1st, 1869, to April 1st, 1870	352	
Posts erected prior to April 1st, 1869	1411	
		1763

IN THE WEST DIVISION,

From April 1st, 1869, to April 1st, 1870	554	
Posts erected prior to April 1st, 1869	1858	
		2412
Total number of Lamp Posts in the city		5388

The following is a statement of the amount of work done and to be done on account of street improvements provided for by the assessments of the year ending April 1st, 1870:

Whole number of cords of Curb Wall	28,309 98-100
Whole number of lineal feet of Curb Stone	84,926 01-100
Whole number of cubic yards of Filling	439,504 84-100
Whole number of cubic yards of Excavating and Grading	82,980 96-100
Whole number of square yards of Wooden Block Paving	513,023 20-100
Whole number of miles of Wooden Block Pavement	19 86-100
Whole number of cubic yards of Graveling	907 27-100

During the past year there has been prepared and sent to the Council the following number of Ordinances in connection with the special assessment business of the Board:

For Street Improvements	121
For Alley Improvements	16
For Miscellaneous Improvements	67
For Sidewalks	169
For the erection of Lamp Posts	98
For the construction of Private Drains	25
For laying Water Service Pipe	86
For laying Gas Service Pipe	15
For Street and Alley Openings and Widenings	24
Total	631

The following list shows the total amount of assessments made in each year by the Board of Public Works since it was created in 1861:

For the year ending April 1st, 1862	$ 42,635 49	
For the year ending April 1st, 1863	46,493 67	
For the year ending April 1st, 1864	389,169 31	
For the year ending April 1st, 1865	103,576 35	
For the year ending April 1st, 1866	802,574 56	
For the year ending April 1st, 1867	317,206 18	
For the year ending April 1st, 1868	1,354,436 48	
For the year ending April 1st, 1869	2,395,683 03	
For the year ending April 1st, 1870	2,836,852 48	
Total for nine years		$8,288,627 55

LINEAL FEET OF WOODEN BLOCK PAVEMENT IN

North Division	39,970	
South Division	79,388	
West Division	79,205	
Lineal feet of Wooden Block Pavement in the North, South and West Divisions		198,563

Number miles of Wooden Block Pavement in the North, South and West Divisions		37.60
LINEAL FEET OF BOULDERS IN		
North Division	1,250	
South Division	19,900	
West Division		
Lineal feet of Boulders in the North and South Divisions		21,150
Number miles of Boulders in the North and South Divisions,		3.77
LINEAL FEET OF McADAM IN		
North Division	9,850	
South Division	22,040	
West Division	27,560	
Lineal feet of McAdam in the North, South and West Divisions,		59,450
Number miles of McAdam in the North, South and West Divisions		11.26
LINEAL FEET OF GRAVELING IN		
North Division	8,150	
South Division	25,820	
West Division		
Lineal feet of Graveling in the North and South Divisions		33,970
Number miles of Graveling in the North, and South Divisions,		6.43
LINEAL FEET OF CINDERING IN		
North Division		
South Division	6,600	
West Division	6,020	
Lineal feet of Cindering in the South and West Divisions		12,620
Number miles of Cindering in the South and West Divisions,		2.40
LINEAL FEET OF CURBING IN		
North Division	87,490	
South Division	171,884	
West Division	235,010	
Lineal feet of Curbing in the North, South and West Divisions		494,384
Total number of miles of street in the city		531.25
Total number of miles Improved		61.46
Total number of miles Unimproved		469.79

ALPHABETICAL LIST OF THE STREETS IN THE CITY, SHOWING THEIR LENGTH, AND THE NUMBER OF FEET IMPROVED AND UNIMPROVED.

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
A	1,230		1,230
Aberdeen	5,280		5,280
Ada	3,560		3,560
Albany	1,060		1,060
Adams	17,400	10,560	6,840
Adelaide	590		590
Alexander	1,280		1,280
Almond	420		420
Ames	1,240		1,240
Ann	2,640		2,640
Archer av	18,860	11,230	7,630
Armitage road	5,680		5,680
Armour	2,650		2,650
Arnold	7,350		7,350
Arthington	780		780
Arthur	1,400		1,400
Ashley	1,930		1,930
Ashland	1,400		1,400
Astor	1,390		1,390
Asylum place	9,500		9,500
Auburn	1,420		1,420
Augusta	8,120		8,120
Attica	1,230		1,230
Bank	940		940
Baldwin	230		230
Barber	2,580		2,580
Batavia	650		650
Bates	650		650
Bauwans	770		770
Beach	3,960		3,960
Benton	670		670
Benson	700		700
Belknap	250		250
Belden av	4,900		4,900
Berlin	1,290		1,290
Barker av	620		620
Better	550		550
Bickerdike	1,860		1,860
Barry Point road	7,750		7,750
Birch	650		650
Bishop court	440		440
Bissell	3,760		3,760
Bixby place	400		400
Blackhawk	5,975		5,975
Forward	136,005	21,790	114,215

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	136,005	21,790	114,215
W. Blackhawk	2,300		2,300
Blackwell	950		950
Blair	550		550
Blanche	2,550		2,550
Bliss	1,000		1,000
Block	635		635
Bloomingdale road	3,351		3,351
Blucher	350		350
Blue Island av	9,205	9,205	
Blanchard	1,200		1,200
Bonaparte	250		250
Bonfield	1,950		1,950
Boon	200		200
Bowery	400		400
Bradwell av	3,215	...	3,215
Bradley	1,480		1,480
Bremen place	1,290		1,290
Bremer	2,580	1,320	1,260
Brigham	1,300		1,300
Broad	720		720
Broadway av	700		700
Broadway place	1,580		1,580
Broom	535		535
Brown	6,660		6,660
Bross av	2,800		2,800
Bryant	600		600
Bryant place	680		680
Bryson	1,300		1,300
Buddan	7,190		7,190
Buena Vista place	250		250
Bunker	2,460		2,460
Burling	4,540		4,540
Burlington	1,000		1,000
Burnside	8,420		8,420
Burton place	375		375
Bushnell	2,190		2,190
Butler	1,650		1,650
Butterfield	8,600		8,600
Boardman	910		910
Beers	5,280		5,280
B	1,230		1,230
C	1,230		1,230
Calumet av	8,090	1,100	6,990
Calhoun place	2,350		2,350
Campbell	7,920		7,920
Canal	13,180	9,200	3,980
California	5,280		5,280
Canal place	525		525
Canalport av	3,800		3,800
Carl	400		400
Forward	273,206	42,615	230,591

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	273,206	42,615	230,591
Carroll	6,720		6,720
Carpenter	6,315		6,315
Cutler	500		500
Cass	2,650		2,650
Catherine	16,400		16,400
Cayuga	1,230		1,230
Cedar	920		920
Centre av	12,660		12,660
Centre place	850		850
Central av	550	68	482
Champlain	2,000		2,000
Centre	6,735		6,735
Chapin	630		630
Charles	880		880
Charles place	400		400
Chase	850		850
Cherry av	3,510		3,510
Chestnut	850		850
Chestnut place	1,100		1,100
Chicago av	28,020	3,370	24 650
Church	3,880		3,880
Church place	630		630
Church court	1,330		1,330
Churchhill	1,300		1,300
Clarinda	1,900		1,900
Clark	32,050	21,150	10,900
Clay	1,300		1,300
Clayton	8,300		8,300
Cleaver	1,810		1,810
Clinton	8,950	3,220	5,730
Clybourn av	10,390		10,390
Clybourn place	5,156		5.156
Coblentz	2,600		2,600
Cologne	3,590		3,590
Columbia	4,600		4,600
Commercial	2,640		2,640
Congress	870		870
College	620		620
Connor	650		650
Colfax	2,250		2,250
Cook	3,240		3,240
Cooper	520		520
Coolidge	3,760		3,760
Cork	620		620
Cornell	2,390		2,390
Cornelia	3,955		3,955
Corwin	630		630
Cottage Grove av	11,100	11,100	
Cottage place	620		620
Couch place	2,330		2,330
Forward	490,957	81,523	409,434

HABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	490,957	81,523	409,434
	2,640		2,640
lace	1,900		1,900
l	1,840		1,840
y	2,250		2,250
	265		265
d	250		250
	1,320		1,320
len	920		920
en av.	820		820
l	1,000		1,000
	1,800		1,800
	1,210		1,210
	900		900
House place	350		350
	4,590		4,590
	1,240		1,240
	1,320		1,320
	280		280
	1,180		1,180
e	590		590
	900		900
	1,230		1,230
	550		550
	1,930		1,930
av.	650		650
	5,555		5,555
	2,640		2,640
	470		470
n	10,310	8,580	1,730
n place	850	850	
n	1,780		1,780
	1,550		1,550
	1,600		1,600
lace	1,600		1,600
	640		640
	3,100		3,100
er	840		840
es	9,580	5,620	3,960
place	350		350
	2,260		2,260
	650		650
	1,280		1,280
	340		340
	27,390	2,900	24,490
	1,465		1,465
	130		130
	1,300		1,300
place	17,070		17,070
	4,565		4,565
	250		250
Forward	620,447	99,473	520,974

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	620,447	99,473	520,974
Dussold	650		650
Deerpath avenue	1,320		1,320
Derby	3,960		3,960
E	1,230		1,230
Eagle	850		850
Eastman	2,450		2,450
Eda	1,320		1,320
Edward	540		540
Egan avenue	21,970		21,970
Egania place	650		650
Eldridge court	870		870
Eleventh	550		550
Elgin	1,050		1,050
Elizabeth	3,950		3,950
Elk Grove	3,915		3,915
Elk	315		315
Ellen	840		840
Elmira	1,230		1,230
Elm	5,660	...	5,660
Elston road	11,800		11,800
Elsworth	1,220		1,220
Ellis	450		450
Ellis avenue	2,700		2,700
Eighteenth	7,360	2,510	4,850
Emily	1,280		1,280
Emerald avenue	3,920		3,920
Emerald	1,350		1,350
Emma	2,220		2,220
English	3,090		3,090
Erie	12,420		12,420
Esplanade	1,300		1,300
Eugenie	1,030		1,030
Evans	9,080		9,080
Ewing	3,740		3,740
Edgar	1,300	..	1,300
F	1,230		1,230
Francisco	2,640		2,640
Fall	800		800
Fabius	1,275		1,275
Farrell	2,100		2,100
Fay	600		600
Ferdinand	3,230		3,230
Fifth	1,110		1,110
Fifteenth	800		800
Finnell	1,100		1,100
Fig	980		980
First	4,290		4,290
Fisk	3,125		3,125
Fleetwood	3,295		3,295
Florimond	500		500
Forward	765,102	101,983	663,119

HABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	765,102	101,983	663,119
'	3,200		3,200
	300		300
	1,235		1,235
venue	4,510		4,510
	3,350		3,350
	1,320		1,320
	17,890		17,890
th	2,070		2,070
avenue	1,420		1,420
	770		770
e	520		520
	1,330		1,330
d	2,600		2,600
	13,180	1,620	11,560
	3,175		3,175
	2,640		2,640
	2,300		2,300
	1,610		1,610
	18,000		18,000
	1,800		1,800
avenue	14,700		14,700
	1,320		1,320
avenue	1,320		1,320
	1,200		1,200
	900		900
	550		550
	2,250		2,250
	2,640		2,640
	840		840
	1,150		1,150
	400		400
	2,560		2,560
	1,435		1,435
lace	250		250
	3,915		3,915
	1,250		1,250
	1,835		1,835
	375		375
ace	1,300		1,300
	1,900		1,900
lace	520		520
	650		650
aven	1,050		1,050
	450		450
	8,280		8,280
ch	1,300		1,300
	4,940		4,940
	460		460
	1,000		1,000
	1,035		1,035
Forward	910,097	103,603	806,494

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	910,097	103,603	806,494
Griswold	2,980	1,670	1,310
Gold	420		420
Genesee av	2,640		2,640
Haines	1,200		1,200
Halsted	36,960	22,090	14,870
Hall	640		640
Haddock place	2,690		2,690
Hamilton	1,050		1,050
Hamilton av	810		810
Hammond	650		650
Hanover	1,990		1,990
Harbine	7,920		7,920
Hinsdale	2,680		2,680
Hinman	600		600
Hinsche	1,770		1,770
Hirsche	4,720		4,720
Hobbie	1,940		1,940
Hoey	400		400
Holden place	850		850
Holstein av	3,250		3,250
Harmon court	870	350	520
Harper	400		400
Harrison	27,270	1,600	25,670
Hart	250		250
Hastings	6,050		6,050
Hawthorn av	7,620		7,620
Hawk	450		450
Haynes	430		430
Henry	6,360		6,360
Henshaw av	4,000		4,000
Hermitage av	2,570		2,570
Herndon	1,185		1,185
Hervey	5,100		5,100
Hewes	630		630
Hickory	3,700		3,700
Hickory av	3,050		3,050
High	1,000		1,000
Hills	1,475		1,475
Holt	2,590		2,590
Homer	1,915		1,915
Honore	2,640		2,640
Hope	650		650
Hotchkiss	455		455
Houston	800		800
Howe	1,560		1,560
Howard	2,600		2,600
Hoyne	13,070		13,070
Hooker	3,700		3,700
Hubbard	12,810		12,810
Hubbard court	870		870
Forward	1,102,337	129,313	973,014

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Unimpro'd Lineal ft.
Brought forward	1,102,327	129,313	973,014
Hubbs	1,290		1,290
Hull	650		650
Hunt	550		550
Hurlbut	7,415		7,415
Huron	5,940	800	5,140
Hamilton	1,075		1,075
Holden	1,300		1,300
Heyam	5,280		5,280
Iglehart av	7,920		7,920
Illinois	4,770		4,770
Indiana	17,540		17,540
Indiana av	13,360	6,550	6,810
Ingraham	780		780
Iowa	3,800		3,800
Iron	650		650
Irwin	450		450
Jackson	23,040	1,625	21,415
James av	1,290		1,290
Jane	1,600		1,600
Jefferson	12,960	4,230	8,730
[illegible] place	250		250
[illegible]	1,930		1,93[illegible]
[illegible] Place	520		520
[illegible]n av	700		700
[illegible]on	3,470		3,470
[illegible]	250		250
[illegible]v	1,750		1,750
[illegible]	850		850
[illegible]	1,320		1,320
[illegible]	400		400
[illegible]	1,300		1,300
[illegible]	220		220
[illegible]	1,270		1,270
[illegible]	1,870		1,870
[illegible]	1,160		1,160
[illegible]a	1,950		1,950
[illegible]ll	1,150		1,150
[illegible]bury	3,290		3,290
[illegible]	670		670
[illegible]e	26,850	5,610	21,240
[illegible]n	1,250		1,250
[illegible]	520		520
[illegible]uth	3,690		3,690
[illegible]ner	1,200		1,200
[illegible]oger	670		670
Kankakee av	10,560		10,560
Labar	1,100		1,100
Lafayette place	400		400
Laflin	10,560		10,560
Lake	27,460	16,265	11,195
Forward	1,322,567	164,393	1,158,174

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	1,322,567	164,393	1,158,174
Lake av	4,410		4,410
Larrabee	10,560		10,560
Langley	1,100		1,100
Lancaster	1,290		1,290
LaSalle	13,240	3,620	9,620
Laughton	2,640		2,640
Laurel	5,280		5,280
Lawrence	420		420
Leavitt	21,300		21,300
Leavenworth	1,300		1,300
Lee place	650		650
Leeve	500		500
Lewis	1,575		1,575
Lexington	900		900
Lime	1,400		1,400
Lincoln	17,130		17,130
Lincoln av	5,200		5,200
Linden	1,310		1,310
Lisle	450		450
Lock	2,000		2,000
Lockport	460		460
Loewe	1,020		1,020
Lowe av	2,740		2,740
Laimbeer	3,720		3,720
Long John	5,280		5,280
Loomis	12,460		12,460
Lubeck	2,600		2,600
Luce	430	...	430
Luke	3,090		3,090
Lundy's Lane	1,270		1,270
Lull	350		350
Lumber	11,650		11,650
Lydia	850		850
Lynch place	350		350
Lytle	2,550		2,550
Lyman	2 220		2,220
Lessing	700		700
Liberty	2 550		2,550
Macalester place	1,260		1,260
Macedonia	810		810
Madison	27,380	15,950	11,430
Main	4,000		4,000
Mautene court	410		410
Maple	1,300		1,300
Marble place	1,480		1,480
Marcy	1,400		1,400
Margaret	660		660
Market	10,050	4,450	5,600
Market square	800		800
Marvin	640		640
Forward	1,519,702	188,413	1,331,289

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'd
Brought forward	1,519,702	188,413	1,331,289
Mark	450		450
Mark av	670		670
Marshfield	1,650		1,650
Mather	1,990		1,990
Mathew	580		580
Maxwell	6,120		6,120
Mary	900		900
May	4,450		4,450
McAlpine	1,500		1,500
McCagg place	370		370
McGlashen	470		470
McGregor	3,350		3,350
McGrath	1,360		1,360
McHenry	2 250		2,250
McMullen court	830		830
McReynolds	1,300		1,300
Meeker	5,280		5,280
Mendell	900		900
Menominie	2,600		2,600
Meredian	850		850
Michigan	4,400	3,150	1,250
Michigan av	21,740	15,800	5,940
Mill	640		640
Miller	1,720		1,720
Milwaukee av	13,950	11,600	2,350
Mitchell	14,660		14,660
Mohawk	4,530		4,530
Monroe	15,600	3,310	12,290
Montgomery	3,680		3,680
Moonaway place	2,550		2,550
Moore	2,640		2,640
Moorman	1,320		1,320
Morton	2,580		2,580
Morgan	15,830		15,830
Milligan	1,540		1,540
Murray	1,360		1,360
Myrick av	1,450		1,450
Meacher	2,580		2,580
McIlroy	1 320		1,320
Middle	2,640		2,640
Napoleon place	1,280		1,280
Nebraska	1,870		1,870
Newberry av	2,760		2,760
Newton	650		650
Nineteenth	2,180		2,180
Nixon	850		850
Noble	7,920	6,020	1,900
Northern av	930		930
North Grove	620		620
North Branch	4,995		4,995
Forward	1,698,357	228,293	1,470,064

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpro'p
Brought forward	1,698,357	228,293	1,470,064
North av	26,400		26,400
Norton	850		850
Nursery	870		870
Nutt	680		680
Oak av	830		830
Oak	4,970		4,970
Oakwood	970		970
Oakwood av	480		480
Oakley	11,660		11,660
O'Brien	1,250		1,250
Ohio	5,100	2,230	2,870
Olive	850		850
Onondaga	1,230		1,230
Ontario	5,640		5,640
Oneida	1,230		1,230
Orchard	6,540		6,540
Osborne	535		535
Oswego	270		270
Otis	460		460
Oglesby	2,640		2,640
Ogden av	10,410		10,410
Parmalee	1,320		1,320
Page	1,970		1,970
Park av	5,280		5,280
Park place	350		350
Park N. and S	3,890		3,890
Park E. and W	840		840
Paulina	18,480		18,480
Pearce	840		840
Pearl	620		620
Pearson	3,130		3,130
Peck	1,033		1,033
Peck court	870		870
Penn	460		460
Peoria	6,590		6,590
Perry	900		900
Perch	1,230		1,230
Peterson	665		665
Phillips	910		910
Pier	350		350
Pine	3,300	2,360	940
Pierpont	1,500		1,500
Pitney	620		620
Pleasant	460		460
Plum	620		620
Polk	15,550	2,000	13,550
Poe	460		460
Post	680		680
Prairie av	11,360	6,550	4,810
Pratt	1,450		1,450
Forward	1,867,950	241,433	1,626,517

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft Improved.	Linea l ft. Unimprv'd
Brought forward	1,867,950	241,433	1,626,517
Prentiss	1,320		1,320
Price place	840		840
Purple	1,200		1,200
Putnam	1,050		1,050
Quarry	2,300		2,300
Queer place	700		700
Quincy	3,390		3,390
Quinn	1,620		1,620
Racine road	2,900		2,900
Railroad av	1,300		1,300
Randolph	12,550	4,900	7,650
Ray	840		840
Rebecca	9,260		9,260
Redfield	1,150		1,150
Rees	3,400		3,400
Reuben	28,340		28,340
Rhine	1,290		1,290
Rhodes av	2,250		2,250
Rice place	660		660
Rice	650		650
Ridgeley	1,320		1,320
Ridgeville road	4,380		4,380
River	1,350	670	680
Roberts	900		900
Robey	26,835		26,835
Roe	220		220
Rose	650		650
Rosebud	1,950		1,950
Ruble	2,350		2,350
Rucker	5,250		5,250
Rumsey	3,170		3,170
Rush	4,820	2,550	2,270
Rum	920		920
Rawson	1,025		1,025
Rountree	1,080		1,080
Rockwell	2,640		2,640
Samuel	2,640		2,640
Sampson	9,040		9,040
Sangamon	7,000	3,600	3,400
Sanger	1,050		1,050
Saratoga	2,150		2,150
Salt	450		450
Schiller	3,510		3,510
School	1,560		1,560
Scott	1,590		1,590
Sebor	1,980		1,980
Second	6,750		6,750
Sedgwick	11,460		11,460
Selah	780		780
Seeley	1,850		1,850
Forward	2,055,630	253,153	1,802,477

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpr'vd
Brought forward	2,055,630	253,153	1,802,477
Selden	680		680
Seneca	1,060		1,060
Seventeenth	1,650		1,650
Seward	2,060		2,060
Shaughnessy	400		400
Sheffield av	5,640		5,640
Sheldon	2,450		2,450
Sherman	2,930	850	2,080
Shober	2,640		2,640
Sholto	2,120		2,120
Short	315		315
Shurtleff av	4,470		4,470
Sibley	1,730		1,730
Sigle	1,670		1,670
Silver	420		420
Sixteenth	24,260	1,700	22,560
Sloan	840		840
Smart	360		360
Smith	1,540		1,540
Smith av	880		880
Snell	670		670
Snider	1,070		1,070
South Port av	2,900		2,900
South western av	14,985		14,985
Spring	1,420	...	1,420
Springer av	930		930
Spruce	630		630
Starr	500		500
State	30,280	15,840	14,440
St. John's place	1,033		1,033
St. Clair	2,020		2,020
Steele	7,920		7,920
Stephenson	800		800
String	1,850		1,850
Stone	970		970
Stowell	600		600
Summit	460		460
Summer	500	...	500
Sumner	620		620
Superior	5,820		5,820
Swift place	1,260		1,260
Sophia	4,515		4,515
Street	1 260		1,260
Snyder	1,300		1,300
Stewart	15,840		15,840
Seymour	4,960		4,960
Sacramento	8,620		8,620
Taylor	17,350		17,350
Temple	670		670
Third av	5,260		5,260
Forward	2,250,708	271,543	1,979,165

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpr'vd
Brought forward	2,250,708	271,543	1,979,165
Thirteenth	1,220		1,220
Thirtieth	4,750		4,750
Thirty first	24,570		24,570
Thirty-second	3,560		3,560
Thirty-third	9,230		9,230
Thirty-fourth	2,000		2,000
Thomas	3,900		3,900
Thompson	2,620		2,620
Thorn	640		640
Throop	10,430		10,430
Todd	250		250
Towns court	270		270
Townsend	2,480	710	1,770
Trenton	2,325		2,325
Tucker	2,640		2,640
Trustee	270		270
Twelfth	27,640	2,500	25,140
Twentieth	4,680		4,680
Twenty-first	5,110		5,110
Twenty-second	23,720	2,620	21,100
Twenty-third	5,960		5,960
Twenty-fourth	6,560		6,560
Twenty fifth	7,780		7,780
Twenty-sixth	7,880		7,880
Twenty-seventh	2,700		2,700
Twenty eighth	880		880
Twenty-ninth	5,200		5,200
Twomey	300		300
Tyler	11,410		11,410
Talman av	1,320		1,320
Troy	440		440
Union	11,310		11,310
Union place	880		880
University place	800		800
Upton	430		430
Ullman	5,280		5,280
Van Buren	18,750	5,420	13,330
Van Horn	3,240		3,240
Valiquitte	660		660
Vernon av	1,260		1,260
Vedder	1,150		1,150
Vermont av	660		660
Vine	1,480		1,480
Vincennes av	2,630		2,630
Valentine	1,050		1,050
Wabansia av	8,315		8,315
Wabash av	21,140	16,100	5,040
Wade	450		450
Wahpanseh av	10,560		10,560
Waller	1,240		1,240
Forward	2,524,728	298,893	2,225,835

ALPHABETICAL LIST OF THE STREETS, ETC.—(CONTINUED.)

NAME OF STREET.	Lineal ft. Length.	Lineal ft. Improved.	Lineal ft. Unimpr'vd
Brought forward	2,524,728	298,893	2,225,835
Wallace	9,300		9,300
Walnut	6,115		6,115
Walsh	2,640		2,640
Ward	550		550
Water S	3 400	3,400	
Water N	5,270		5,270
Water W	2,350		2,350
Waterville	800		800
Warren av	8,405		8,405
Washington av	10,780		10,780
Washington place	400		400
Washington	16,690	9,910	6,780
Waver	450		450
Wayman	1,230		1.230
Weed	2 000		2,000
Wells	16,790	12,300	4,490
Wendell	1,450		1,450
Wentworth	13.120		13,120
Wesson	2,580		2,580
Western av	36,960		36,960
West Liberty	2,640		2,640
White	3,750		3.750
White House place	1,260		1.260
Whiting	1.300		1,300
Whitney	1,575		1,575
Wilcox	4,240		4,240
Will	550		550
William	2,670		2,670
Willow	3,310		3,310
Willard place	420		420
Wilmot av	3,065		3,065
Wilson	1,330		1,330
Winchester	2,630		2,630
Winter	500		500
Wisconsin	2.320		2,320
Wood	23,515		23.515
Wright	5,230		5,230
Wrong	1,600		1,600
Washtenaw av	1,320		1,320
Whisky Point road	7,980		7,980
Whiteside	13,790		13,790
Whipple	1,140		1,140
Yeaton	680		680
York	950		950
Yorktown	1,735		1,735
Yager	2,640		2,640
Streets not named	46,880		46,880
Total	2,805,028	324,503	2,480,525

Respectfully submitted,

F. H. BAILEY,

In charge of Special Assessments.

SIDEWALKS.

The following exhibit of sidewalks constructed under the ordinances of the Council, by owners and by the Board, under a contract for such work, it is hardly necessary to say, pertain exclusively to pine plank walks. In nothing does Chicago seem so much to manifest a lack of that permanency and solidity which properly belong to a large and prosperous city, as in its sidewalks. Constructed of a material which shows signs of decay almost as soon as laid on the ground, and which as soon is liable to fracture, to holes and consequent accident; our sidewalks are altogether inferior to what they should be, and are the source of constant care and complaint. Where the walks are much elevated it is not easy to find a suitable material other than wood, except at much greater cost. It is to be hoped, however, that in the well occupied parts of the city it will speedily give place to something more substantial.

MR. A. W. TINKHAM,

Secretary of the Board of Public Works.

SIR: The undersigned respectfully presents the following report, relating to the construction and reconstruction of sidewalks, from April 1, 1869, to March 31, 1870, under the following ordinances:

NORTH DIVISION.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
B. S.	Division st.	Halsted st.	Division st. br.	All built.	
S. S.	Whiting "	Delevan add.	Market st.	"	
B. S.	Orchard "	Clybourn av.	North av.	"	
S. S.	Centre "	Orchard st.	Halsted st.	"	
N. S.	Centre "	Halsted "	Fremont "	"	
W. S.	Halsted "	Centre "	Sophia "	"	
N. S.	Scott "	N. State "	Stone "	"	
E. S.	Crosby "	Larrabee "	Division "	"	
W. S.	Orchard "	Centre "	Sophia "	"	
B. S.	Gardner "	Vine "	Halsted "	"	
B. S.	Weed "	Halsted "	Sheffield "		not built.
W. S.	Bissell "	Dayton "	Clay "	"	
N. S.	Asylum pl.	Hurlbut "	Halsted "	"	

NORTH DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
B. S.	Dayton st.	North av.	Willow	All built.	
S. S.	North av.	N. Dearborn	N. Clark	"	
W. S.	N. Dearborn st	Burton pl.	North av.	"	
E S.	N.Branch st.	Bliss	Division	"	
E. S.	Racine av.	Clybourn pl.	Centre		175 feet.
S. S.	Willow st.	Sheffield av.	Bissell	"	
S. W.	Bissell "	Dayton "	Willow	"	
W. S.	Crosby "	Larrabee	Division	"	
W. S	Cherry av.	Bliss	Division		
N. E.	Clybourn "	North av.	Racine av.		345 feet.
E. S.	Roberts st.	Erie	Chicago av.		not built.
N. S.	Wendell "	Market	Sedgwick		"
E. S.	Racine av.	Centre	Fullerton av.		"
N. S.	Centre st.	Racine av.	Larrabee		"
B. S.	Asylum pl.	Halsted	Clybourn av.		"
N. S.	Division st.	Sedgwick	Clybourn av.	"	
B. S.	Clybourn av.	Division	North av.	"	
S. S.	Huron st.	Townsend	Kingsbury		"
E. S.	Dayton "	Sophia	Asylum pl.		"
E. S.	N. Clark "	Sophia	Asylum pl.		150 feet.
E. S.	Selah "	Hobbie	Division		150 feet.

SOUTH DIVISION.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
W. S.	Honoré	Napoleon pl.	Twenty-eighth	All built.	
N. S.	Napoleon pl.	Buddan	Stewart av.	"	
S. S.	Napoleon pl.	Hanover	Stewart av.	"	
W. S.	Levee st., in	part of Lot 5,	B. 12, C. S. S.	Sec. 29.	not built.
B. S.	Bushnell	Hanover	Archer av.	All built.	
B. S.	Bryant	Vincennes av.	Moonaway pl.	"	
S. S.	Lancaster av.	Benson	Ullman	"	
B. S.	Burnside	Twenty-fifth	Twenty-sixth	"	
N. S.	Thirty-third	Butterfield	Kankakee av.	"	
S. S.	Thirty first	Cottage-G. av	Forest av.	"	
W. S.	Shurtleff av	Thirty-first	Thirty-third	"	
E. S.	Mary	Archer av	Hickory		
B. S.	Kossuth	Wentworth av	Halsted	"	
B. S.	Buddan	Twenty sixth	Thirty-first	"	
B. S.	Emerald av.	Douglas pl.	Egan av.	"	
E. S.	Benson	Thirty-first	Lancaster		264 feet.
N. S.	Twenty-sec'nd	Prairie av.	Kankakee av.	"	
B. S.	Street running	E. and W. thro'	McPherson &	Allerton Ad.	205 feet.
E. S.	Kankakee av.	Wahpanseh av	Egan av.		800 feet.
E. S.	Hanover	Archer av.	Kossuth	"	
S. S.	Twenty-third	Stewart av.	Buddan	"	
B. S.	Langley	Egan av.	Wahpanseh av	"	
W. S.	Wallace	Douglas pl.	Esplanade	"	
S. S.	Quincy	Clark	Wells	"	
S. S.	Thirty-third	Cottage-G. av.	I. C. R. R.	"	
B. S.	Moonaway pl.	Wahpanseh av	Douglas pl.		304 feet.
W. S.	Wabash av.	Thirty-second	Douglas pl.		
W. S.	Reuben	Columbia	Archer av.		188 feet.

SOUTH DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
S. S.	Wahpanseh av	Stewart av,	Halsted		249 feet.
B. S.	Twenty-sev'th	Wentworth av,	Stewart av,	All built.	
N. S.	Mill	Reuben	Jones	"	
S. S.	Ray	Prairie av,	S. Park av.		100 feet.
W. S.	Buddan	Twenty-fifth	Twenty-sixth	"	
B. S.	Garibaldi	Twenty-sixth	Twenty-ninth		648 feet.
E. S.	Vernon av.	Douglas pl,	Wahpanseh av		216 feet.
N. S.	Twenth-first	Stewart av.	Purple		300 feet.
S. S.	Crippin	Indiana av.	State		129 feet.
B. S.	Alexander	Wentworth av,	Stewart av.		975 feet.
W. S.	Arnold	Thirty-first	Thirty-third		250 feet.
S. S.	Egan av.	Lake av.	Cottage-G. av.		30 feet.
B. S.	Archer av.	State	Ogden Slip	"	
S. S.	Randolph	Market	C. River	"	
S. S.	Twenty-ninth	Michigan av.	State		240 feet.
E. S.	Lock	Archer av,	Fuller		not built.
N. S.	Thirtieth	Clark	Wentworth av,		120 feet.
S. S.	Lyman	Deering	Lock		150 feet.
N. S.	Napoleon pl,	Buddan	Wentworth av.		not built.
B. S.	Elgin	Stewart av,	to western term		"
E. S.	Arnold	Twenty-third	Twenty-fourth		150 feet.
N. S.	Cayuga	Halsted	Laurel		not built.
E. S.	Grove	Archer av,	Eighteenth		"
S. S.	Twenty-first	Stewart av.	State		300 feet.
B. S.	Stewart av.	Archer av.	Grove		not built.
E. S.	S. Park av,	Twenty-sec'nd	Twenty-sixth		"
W. S.	Murray	Kossuth	Archer av,	"	"
N. S.	Wahpanseh av	Cottage-G. av.	I. C. R. R.		175 feet.
S. S.	Twenty-third	Wentworth av.	Buddan	"	

WEST DIVISION.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
N. S.	Ranson	McHenry	Elston road	All built.	
N. S.	Wright	Wabansia av.	North av.	"	
W. S.	McHenry	Blanche	Wabansia av.	"	
W. S.	Morgan	Evans	Twenty-sec'nd	"	
N. S.	Gurley	Sholto	Centre av.	"	
B. S.	Mather	Halsted to	eastern term's	"	
B. S.	Curtis	Second	May	"	
N. S.	Catherine	Centre av.	Morgan	"	
E. S.	Throop	Blue-Island av	Twenty-sec'nd	"	
E. S.	Loomis	"	"	"	
W. S.	Laflin	"	"	"	
W. S.	Holt	Division	Bradley	"	
S. S.	Coolidge	Waller	Blue-Island av	"	
B. S.	String	Canalport av.	Sixteenth	"	
N. S.	Rebecca	Morgan	Centre av.	"	
B. S.	Tyler	Centre av.	Throop	"	
N. S.	Twenty-sec'nd	"	Reuben	"	
N. S.	Kinzie	Elizabeth	Western av.	"	
W. S.	Rumsey	Augusta	Jane	"	
S. S.	Catherine	Loomis	Wood	"	

WEST DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
E. S	Western av.	Madison	Van Buren	All built.	
N. S.	Clayton	Blue-Island av	Wood	"	
S. S.	Fourth	Elizabeth	Noble	"	
E. S.	Wood	West Madison	Van Buren	"	
S. S.	Wright	Canal	Stewart av.	"	
B. S.	Bunker	"	Beach	"	
E. S.	Sholto	Eleventh	Polk	"	
B. S.	Dussold	Jefferson	Halsted	"	
N. S.	Hastings	Reuben	Wood	"	
S.W.S	Milwaukee av.	Wood	North av.	"	
E. S	Elston road	Fullerton av.	Clybou-n pl	"	
W. S.	Reuben	Cornelia	Division	"	
S. S.	Second	Carpenter	Noble	"	
B. S.	Barber	Canal	Halsted	"	
N. S.	Damon	Sholto	May	"	
E. S.	Throop	Taylor	Twelfth	"	
E. S.	Sangamon	Van Buren	Harrison	"	
S. S	Kinzie	Reuben	Paulina	"	
W. S.	Wood	Ashley	Fourth	"	
S. S.	Adams	Reuben	Laflin	"	
S. S.	Harrison	Canal	Beach	"	
W. S.	Leavitt	Madison	Warren av.	"	
N. S.	Evans	Robey	Centre av.		not built.
S. S.	Fulton	Leavitt	Oakley	"	
S. S.	Evans	Halsted	John	"	
E. S.	John	Evans	Twenty-sec'nd	"	
B. S.	Harrison	Centre av.	Reuben	"	
B. S.	Hinman	Wood	Lincoln	"	
E. S.	Throop	Taylor	Twelfth	"	
B. S.	Seward	Canalport av.	Lumber	"	
S. S.	Harrison	Lytle	Leavitt	"	
S. S.	Mitchell	Loomis	Paulina	"	
E. S.	Leavitt	Lake	Kinzie	"	
B. S.	Walnut	Hoyne	Oakley	"	
B. S.	Laflin	Adams	Harrison	"	
B. S.	Ashley	Wood	Hoyne	"	
W. S.	Lincoln	Indiana	Fourth	"	
W. S.	Johnson	Twelfth	Sixteenth	"	
B. S.	Loomis	Jackson	Harrison	"	
N. S.	Coolidge	Blue-Island av	Waller	"	
N. S.	Bloom'gdale rd	Reuben	Commercial	"	
W. S.	Ridgeville rd.	Clybourn pl.	North av.	"	24 feet.
S. S.	Clybourn av.	N. Branch br.	Commercial	"	
B. S.	Laflin	Adams	Harrison	"	
S. S.	McGrath	West terminus	Hoyne		72 feet.
B. S.	Laflin	Harrison	Taylor	partly built.	
E. S.	Noble	Indiana	Fourth	built.	
S. S.	Ferdinand	Lincoln	Leavitt	partly built.	
N. S.	Harrison	Campbell av.	Western av.	"	
B. S.	Jackson	Western av.	Rockwell	"	
W. S.	Western av.	Madison	Harrison		75 feet.
S. S.	Harrison	Western av.	Leavitt	partly built.	
S. S.	Fourth	Lincoln	Robey	"	
E. S.	Noble	Kinzie	Hubbard	"	

WEST DIVISION—CONTINUED.

SIDE.	STREET.	FROM	TO	ALL BUILT.	EXCEPT.
B. S.	Page	Kinzie	Hubbard	built.	
B. S.	Fox pl.	Elston road.	Noble	"	
S. S.	Twenty-sec'nd	Morgan	Halsted	"	
N. S	Sampson	Laflin	Reuben	"	
W. S.	Union	Luke	Eighteenth	"	
B. S.	Milwaukee av.	Kinzie	Lake	not opened.	
N. S.	Fulton	Lincoln	Wood	built.	
W. S.	Ridgeville rd.	Milwaukee av.	Bloom'gdalerd	partly built.	
N. S.	Harbine	Lincoln	Campbell	"	
S. S.	Van Buren	Western av.	Rockwell	"	
B. S.	Seymour	Kinzie	Lake	"	
S. S.	North av.	The River	Ridgeville rd.	"	
S. S.	Wilcox	Western av.	California	"	
B. S.	Robey	Kinzie	Hubbard	"	
E. S.	Ashland av.	Blackhawk	North av.	"	
E. S.	Ada	Hubbard	Kinzie	built.	
B. S.	S. Western av.	Madison	Robey	partly built.	
S. S.	Lake	C. C. C. R. R.	California	nothing b'lt.	
B. S.	Stanton	Madison	Lake	partly built.	
W. S.	Blair	Canalport av.	S. termin Blair	"	
B. S	John's pl.	Halsted	Green S. Br'ch	Add. Built.	
E. S.	Osborne	Indiana	Fourth	partly built.	
S. S.	Elk	Bauwan	Ridgeville rd.	"	
E. S.	Dickson	North av.	Blanche	nothing b'lt.	
B. S.	Ada	Fourth	Indiana	"	
E. S.	Noble	Fourth	Cornelia	partly built.	

SIDEWALKS ASSESSED AND BUILT BY CONTRACTOR.

SOUTH DIVISION.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
N. S.	Nineteenth	State	Blackwell	865½	$311.58*
W. S.	Shurtleff av.	Twenty-sixth	Napoleon place	311½	112.14
E. S.	Lock	Archer av.	Thirty-first	243	87.48
B. S.	Butterfield	Twenty-seventh	Thirty-third	234	84.24
E. S.	Farrell	Archer av.	C. & St. L. R. R.	125	45.00
W. S.	Wentworth av.	Sixteenth	Thirty-first	599	215.64
W. S.	Lake av.	Douglas place	Egan av	125	45.00
B. S.	Bryant av.	Vincennes av.	Moonaway place	100	36.00
S. S.	Thirty-first	Halsted	Wentworth av.	261	93.96
B. S.	Lyman	Main	Deering	273	98.28
N. S.	Oneida	Laurel	Halsted	388	139.68
N. S.	Archer av.	Beers	South Branch	25	9.00
N. S.	Thirty-first	Deering	Pitney av.	353	116.94
E. S.	State	Douglas place	Egan av.	1938	697.67
W. S.	Dashiel	Douglas place	Egan av.	144	51.84
B. S.	Buddan	Twenty-sixth	Thirty-first	247	88.92
W. S.	Wabash av.	Thirty-second	Douglas place	100	36.00
W. S.	Wallace	Douglas place	Esplanade	200	72.00
B. S.	Emerald	Douglas place	Egan av.	432	155.52
B. S.	Kossuth	Wentworth av.	Halsted	1562	562.32
			Total..		$3,059.21

WEST DIVISION.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
S. S.	Van Buren	Reuben	Robey	442	$155.52
E. S.	Lytle	Taylor	Twelfth	125	48.60
B. S.	Henry	Blue Island av.	Eastern terminus	745	263.20
N. S.	Indiana	Lincoln av.	Robey	188	60.48
E. S.	Lincoln	Lake av.	Washington	107½	38.70
N. S.	Catharine	Centre av.	Morgan	295	106.20
B. S.	Loomis	Twelfth	Sixteenth	218	78.48
N. S.	Rebecca	Laflin	Reuben	80	28.80

* Around Hospital.

WEST DIVISION.—CONTINUED.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
E. S.	Western av.	Madison	Van Buren	469	$168.84
E. S.	Ruble	Sixteenth	Eighteenth	121	43.56
E. S.	Twelfth	Laflin	Reuben	48	17.28
N. S.	Hastings	Reuben	Wood	50	18.00
N. S.	Hastings	Laflin	Reuben	576	207.36
S. S.	Coolidge	Waller	Blue Island av.	25	9 00
E. S.	Wood	Madison	Van Buren	301	108.36
S. S.	Washington	Leavitt	Western av.	48	17.28
N. S.	Mitchell	Reuben	Paulina	96	34.56
N. S.	Rebecca	Morgan	Centre	195	70 20
S. S.	Wright	Canal	Stewart av.	100	36.00
S. S.	Catherine	Throop	Loomis	36	8.64
N. S.	Kinzie	Elizabeth	Western av.	530	190 80
N S.	Mitchell	Laflin	Rebecca	403	146 88
W.S.	Holt	Division	Bradley	96	34.56
W.S.	McHenry	Blanche	Waubansia	50	18.00
W.S.	Morgan	Twelfth	Sixteenth	858	308.88
B. S.	Clayton	Centre av.	May	175	63 00
B. S.	English	Centre av.	May	185	66.00
S. S.	Eighteenth	Canal	Halsted	82	29 52
N. S.	Adams	Reuben	Laflin	...	43 20
S. S.	Harrison	Canal	Beach	25	9 00
W. S	Reuben	Harbine	Madison	693	263.34
B. S.	Walnut	Hoyne	Oakley	99	35.64
B. S.	Bunker	Canal	Beach	150	54 00
E. S.	John	Evans	Twenty-second	75	27 00
N S.	Coolidge	Blue Island av.	Waller	48	17 28
W.S.	Ridgeville road	Clybourn place	North av.	386	138.24
S. S.	Evans	Halsted	John	203	73 08
W.S.	Milwaukee av.	Wood	North av.	275	99 00
B. S.	Ashley	Wood	Hoyne	480	172 80
B. S.	Curtis	Second	May	60	21.60
E. S.	Throop	Taylor	Twelfth	25	9 00
B. S.	Seward	Canalport av.	Lumber	75	27.00
			Total.		$1.085.70

NORTH DIVISION.

SIDE.	STREET.	FROM	TO	NO. OF FEET.	COST.
W. S.	Cherry av.	Bliss	Division	150	$54.00
B. S.	Gardner av.	Vine	Halsted	30	10.80
E. S.	North Branch	Bliss	Division	252	90 00
S. S.	Whiting	Market	Delavan add.	50	18 00
			Total..		$172.80

A TABLE

EXHIBITING THE NUMBER OF FEET OF SIDEWALK CONSTRUCTED OF DIFFERENT WIDTHS IN EACH DISTRICT, DURING THE FISCAL YEAR.

No. Districts in each Division.	*Sidewalks Constructed in New Localities.*								*Reconstructed New in Old Localities.*							Yearly Totals in each Dist.
	25 ft	4 ft	6 ft	7 ft	8 ft	10 ft	12 ft	14 ft	4 ft	6 ft	8 ft	10 ft	12 ft	14 ft	16 ft	
First District, North Div'n			4.922	...	...	..				8,353	165	465		4.155	16.743	34.803
Second " " "			19,458	...	...	.				2,367	125	349		3.225	3.676	29 200
First " South "				...	...	.				803	711		542	6.768	4.418	13.242
Second " " "		...		...	...	.				1.619	7.205	2.303	2.871	4.430	905	19.333
Third " " "		170	92,577	180	...	.	50	2,004		2,707	100			4.796	1,325	103.609
First " West "	400	...	35.843		...	183	40		221	16.668	40		603	240	480	54.718
Second " " "		850	10.766		200				100	18.335	234	637	983	4.391	16,380	52.876
Third " " "		360	33.801		380	414			415	8.681		1.470		1.717	14,439	61.677
Fourth " " "		...	59 036						275	23.078		375		6,064	13.380	102,208
	400	1380	256.403	180	580	597	90	2,004	1,011	82,611	8,580	5,599	4.999	35,786	71,746	

Grand Total, 471,666

261.634 feet of walk on new localities.

Equal to 49 6-10 miles.

Equal to 89⅓ miles.

Of the above, 3 401 ft. are stone.

Last year report, 470 miles = 519 6-10 miles of all kinds.

From the foregoing exhibit, it is very evident that property owners are more inclined to construct walks of cheap material which require constant watching, than use that which is imperishable.

The concrete materials of different Patents have been laid in many localities about the city, but as a general thing, more as a test of their suitableness for sidewalk purposes. Some give evidence of durability, while others are proved worthless. No specimen yet laid can claim superiority to, or even equal stone, when cost is taken into consideration.

From past experience, it is clearly certain that more regard must be paid to the material of which sidewalks are constructed, and to accomplish that object with greater certainty, the ordinance ordering the improvement might specify the material, whether stone, concrete, brick, ordinary plank, or plank preserved by some preserving process.

Large preparations are now made in the city for preserving timber for all purposes, and if wood is rendered any less perishable it should be adopted. It costs seven cents per foot more for walks six feet wide, and wider walks in proportion.

All must admit there is no portion of our streets that require greater care and watchfulness than our sidewalks. Better material and mechanism must be more generally used to ensure less bodily injury, and consequently less law suits.

J. L. HANCHETTE,

Supt. of Sidewalks.

BRIDGES.

The new work of the year includes the construction of the new pivot bridge at Indiana street, with its connecting viaduct passing above the tracks of the Chicago and Northwestern Railway; and of new pivot bridges at Adams street, Kinzie street, and at Division street across the North Branch Canal.

With all new bridges to be erected across the South Branch the first step to be taken is to widen the river at the particular point, at much cost and delay, so as to give sufficient width of channel for the passage of vessels. A large share of the gross cost to the city of such bridges is due to the widening of the river.

Below is a list of the movable bridges owned and operated by the city, and crossing the river and connecting branches. As will be seen, the number of the bridges is continually multiplying with the growth of the city, while the slow-moving float-bridges, which at one time were the only ones in use, have almost entirely given place to elevated truss bridges, revolving on a central pivot and pier.

LIST OF BRIDGES.

NAME AND LOCATION.			DESCRIPTION.
Clybourn avenue.....	North Branch.....		Wooden truss pivot bridge.
North avenue.....	"	"	 " " " "
Division street.....	"	"	Truss pivot bridge, iron chords, wooden braces.
" "	"	"	Canal.. " " " "
N. Halsted "	"	"	Wooden truss pivot bridge.
Chicago avenue.....	"	"	Truss pivot bridge, iron chords, wooden braces.
Erie street.....	"	"	Wooden float bridge.
Indiana "	"	"	Truss pivot bridge, iron chords, wooden braces.
Kinzie "	"	"	 " " " "

NAME AND LOCATION.			DESCRIPTION.
Rush	"	Main River.....	Wooden truss pivot bridge.
State	"	" "	" " " "
Clark	"	" "	Truss pivot bridge, iron chords, wooden braces.
Wells	"	" "	Wooden truss pivot bridge.
Lake	"	South Branch.....	Truss pivot bridge, iron chords, wooden braces.
Randolph street.....		" "	Wooden truss pivot bridge.
Madison	"	" "	All iron.
Adams	"	" "	Truss pivot bridge, iron chords, wooden braces.
Van Buren	"	" "	" " " "
Polk street.....		" "	" " " "
Twelfth street.....		" "	" " " "
Eighteenth	"	" "	" " " "
S. Halsted	"	" "	Wooden truss pivot bridge.
Main street		" "	Truss pivot bridge, iron chords, wooden braces.
Fuller	"	" "	Wooden truss pivot bridge.
Reuben	" West fork of	" "	" " " "
Archer avenue.....		South Branch	Truss pivot bridge, iron chords, wooden braces.
Western	" West fork of	" "	" " " "

PUBLIC BUILDINGS.

CITY HALL.—During the year the walls of the new addition were erected, and its stone and brick masonry substantially completed — including the iron and masonry work for the floors. Early in March, however, a serious disaster occurred to the iron and slate roof, then in process of erection. The north half settled and fell, and the portion left on the walls was damaged and insecure, so that the reconstruction of the entire roof on a plan of greater strength than at first, became necessary; the work of completing the building was, in consequence, much delayed.

The fallen portion of the roof was rebuilt in a heavier and stronger manner than at first, and the standing portion correspondingly strengthened, at a cost of $2,357 — the whole roof being made quite firm and secure.

The city offices, as is generally known, will occupy not only this new building, but the west half of the old Court House. The contracts include the erection of the new part, and the re-modeling of the old. The work on the old building, of course, could not be done until the new addition was finished, and the various city offices transferred to it. As much time has necessarily been consumed in accomplishing this, the entire building, old and new, will not be finished until late in the year.

CITY BRIDEWELL.—At the date of this report, the building constituting the prison proper is finished.

Water is yet to be supplied to it, and the boring for an artesian well for that purpose is in progress, with the expectation that the work may be finished within some three months. The grounds, too, are without any suitable enclosure.

The building now finished includes the two prisons for males and females, respectively, rooms for the Warden and officers, the kitchens, bakery, laundry, hospitals for each sex, and a chapel — the entire building being warmed by a steam-heating apparatus, and thoroughly fitted up with all necessary plumbing for washing, bathing, etc.

The importance of this institution warrants the Board in presenting a detailed description of it. It is hoped that its use will work a change in the discipline and management of criminals which will be beneficial to them and to the city.

A general view of the buildings as erected, and of those yet to be built, is submitted with this report.

The location of the new City Bridewell is on that tract of land containing about fifty-eight acres, lying north of the South Branch of the Chicago River, in the E. ½ of S. W. ¼ of Sec. 25, T. 39, R. 13, E.

The following description is by the architect, Jno. M. Van Osdel, Esq.:

"The natural surface of the land is from eight to ten feet above the river when at ordinary level, and the grounds are, therefore, susceptible of complete surface drainage to the river. The building fronts east on California street, at a distance of three hundred feet from said street — the south side of the prison fronting the river at a distance of about four hundred feet. The base of the entire building has an elevation of three feet six inches above the natural surface of the ground, a filling of earth to the depth of three feet six inches having been made in and around the building, and graded off from the walls outward, for the distance of one hundred feet. The earth for this filling was obtained from the bank of the river, as it is contemplated to widen and deepen it. The artificial surface of the ground at the building is therefore about twelve feet above the surface of the river.

It is proposed to employ the convicts in making further excavations of the river bank, and to fill up and grade the courts or yards of the prison and its immediate surroundings, to conform to the filling and grading already done.

The buildings now finished are of brick, with slate roof, plain

and substantial structures, with no costly architectural embe ment, except so far as it appeared necessary to give expre of purpose.

The Warden's house, forty-eight by sixty feet, two s high, occupies the centre of the east front.

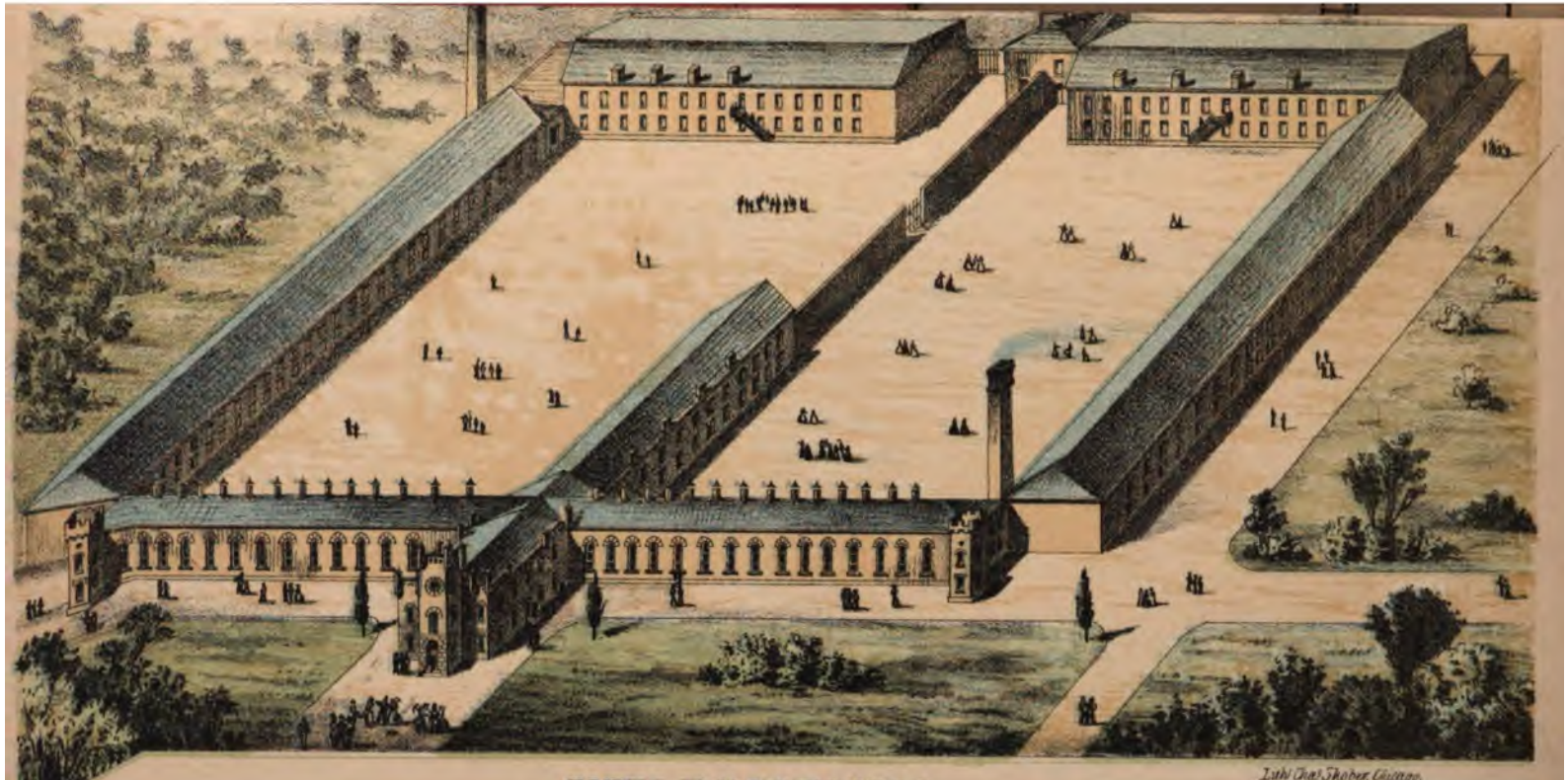
The two cell houses, each fifty by two hundred and tw four feet, extend north and south, forming wings, and attached to the rear of the Warden's house. The priso males, in the south wing, contains two hundred and eighty- cells. That for females, in the north wing, contains two hu cells. The cells are of the most improved and substantial acter, and are constructed entirely of cut-stone work, wi joints or seams, excepting at the angles. The cells are arr in stories, four stories high, with galleries and stairways of Each cell is ventilated by a separate flue, and has a door o gratings, furnished with Newell's prison-door locks. Each of doors is furnished with a sliding bar, moved by a lev means of which all the doors of that range are closed and l simultaneously.

The north end of the north cell house is formed in stories. On the first floor is the boiler and fuel-room, forty feet square. In this room there are set up three large boilers, tanks, pumps, and other apparatus for heating the s buildings. On the first floor there is also a bathing-room, up with six iron bath tubs, wash-bowls, etc. In the second is the hospital for females, thirty by forty-eight feet, well li and ventilated, and several rooms for the Matron and Assis

The Warden's house, on the first floor, has the public o parlor and reception-room and Warden's living room; o second floor, the Warden's parlor, Chaplain's room, private and bed-rooms.

Immediately in rear of the Warden's house, and attach the rear of the cell houses, is a building fifty feet wide, an hundred and thirty-eight feet long, two stories high, conn with the Warden's house by corridors, which separate th houses.

In the attic, resting on the walls of these corridors, the four large iron tanks, to be supplied with water from the ar



CITY BRIDEWELL.

Lith. Thos. Shober, Chicago.

well, to be forced up by pump in the boiler-room. Pipes lead from these tanks to furnish water to the kitchen, laundry, water-closets, and bath-rooms throughout.

The kitchen, laundry, bakery, and chapel are arranged on the first floor of the last-mentioned building. The officers' dining-rooms and bed-rooms, the hospital for males, the dispensary, etc., are on the second floor.

There are yet to be erected the work-shops, comprising six buildings, fifty by one-hundred and fifty feet each, two stories high, arranged so as to form two enclosures, or courts, two hundred by three hundred feet. These courts will be divided by a wall from the rear of the kitchen building to the stable. The stable will be located centrally, in rear of the principal buildings, and will be fifty feet square, and two stories high. A boiler and engine-room, fifty by seventy-five feet, will be built at the south-west angle of the court, with shafting extending from the engine-room through three of the work-shops. The artesian well now in progress is expected to furnish water for all purposes required."

School Buildings.— There were erected during the year, for the use of the Board of Education, the brick primary school buildings on North LaSalle street, Mitchell street, and Monroe street. The four-story brick grammar-school houses on Forest avenue, and Larrabee street were in progress during the year, but were not completed at its close.

Police Buildings—For the Board of Police there was built the brick Engine-House and Police Stations at the corner of North avenue and Larrabee street.

PUBLIC PARKS.

The parks of the city under the care of the Board, and for which any attempt has been made for their improvement or ornamentation, are:

Lincoln Park,
Washington Park,
Union Park,
Jefferson Park,
Vernon Park,
Lake Park,
Dearborn Park,
Ellis Park.

There are small squares and pieces of land intended for public grounds, which are not included in the above list.

The Board have given much attention to the work of beautifying these various parks, and have prosecuted the work as far as was practicable with the amount of means at their disposal. The largest expenditures during the year have, of course, been made at Lincoln and Union Parks, but much has also been done both at Ellis and Jefferson Parks, in filling and grading and laying out the grounds, and preparing for their full improvement. It is evident that when brought into use, and especially as they become such general places of resort as Lincoln and Union Parks that a large outlay is necessary, merely to keep up the grounds in good condition. The drives and walks, the artificial ponds and various structures, the draining, lighting, and watering; the trees, shrubbery, sodding, and flowers all require constant care and expense, and without such the grounds will speedily become places of disorder and waste.

Among the improvements of the year at Lincoln Park, was the construction of a graveled roadway from the head of North

Dearborn street through the cemetery, and along the lake shore to the park. Much was done in seeding down a large share of the ground to grass, in the planting of large elm and other trees and shrubbery, in the construction and enlargement of the bridges, the erection of suitable buildings and enclosures for the animals, and in expenditures for drainage, for lighting, and for supplying water.

At Union Park, the work of the year included the erection of the large pavilion for a music stand, the construction of the two fountains with their ornaments, the erection of buildings and enclosures for the animals, the introduction of water for the fountains, drinking hydrants, and animals, the planting of deciduous and evergreen trees, the completion of the leveling and seeding of the grounds, etc.

Many very generous donations of rare animals have been made to the city, not only by donors whose homes are within the city, but from those who reside at places quite remote from it. In this way quite interesting collections have been gathered at Lincoln and Union Parks.

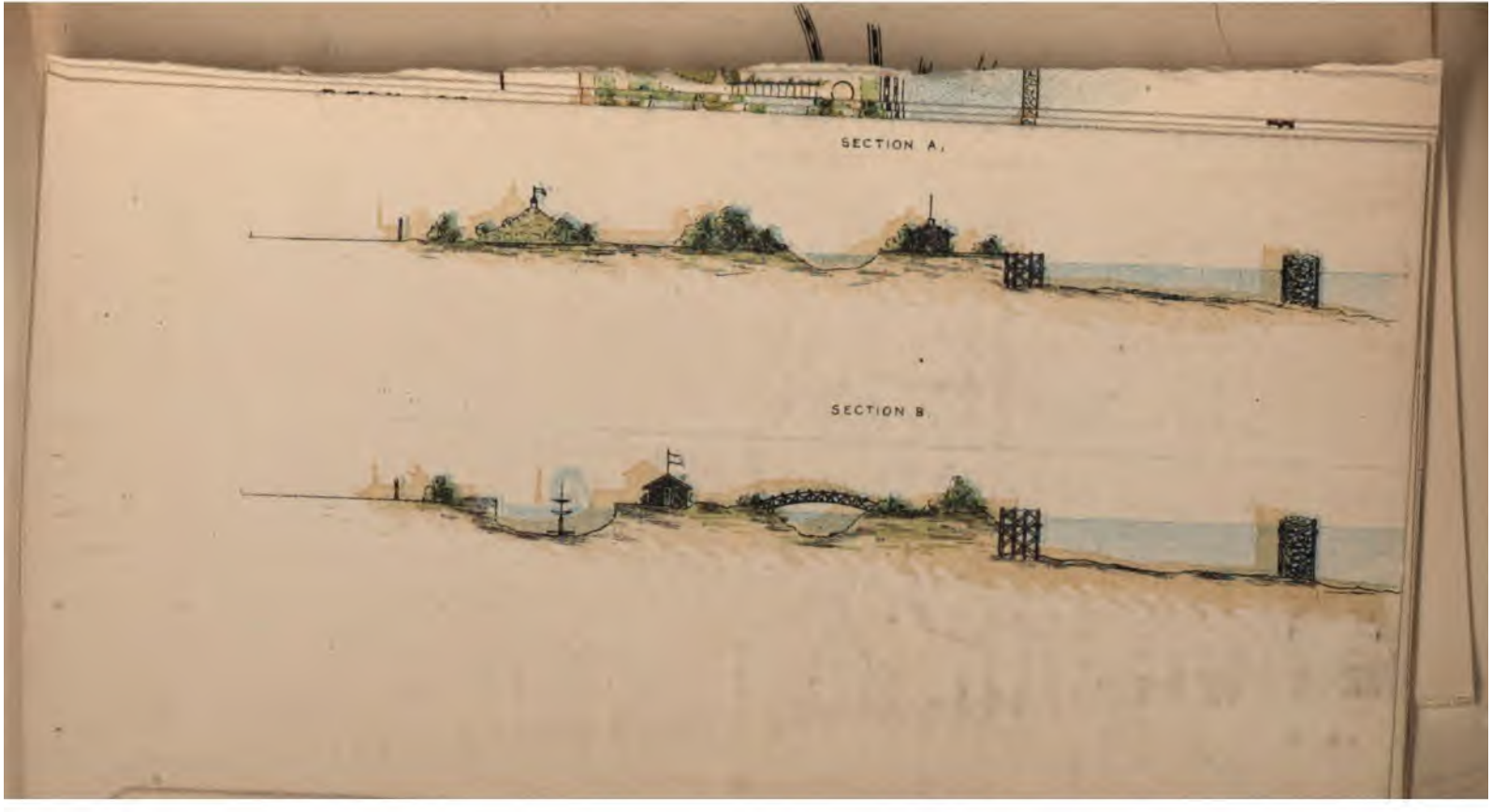
With this report, the Board present plans of Lincoln, Union, Jefferson, Vernon, and Ellis Parks, and as proposed for Lake Park, which it is believed will generally be of interest to the citizens. The plan for the improvement of Lake Park is being carried out as rapidly as the filling progresses.

At some of the parks, and at several other public places, the Board have erected water closets and urinals, with a drinking hydrant and water trough for animals. They are found to be of great convenience to the public. The Board recommend that their number be increased.

CONCLUSION.

The Board append to their report the annual report of the City Engineer, giving more full information as to many matters briefly referred to by them, and a detailed exhibit of all their financial transactions. To these statements they respectfully invite your attention.

JOHN McARTHUR,
W. H. CARTER,
REDMOND PRINDIVILLE,
Board of Public Works.


SECTION A.
SECTION B.

CITY ENGINEER'S REPORT.

CHICAGO, *October* 1, 1870.

To the Board of Public Works:

GENTLEMEN: Herewith your Engineer respectfully presents his Report for the year ending March 31, 1870, and as usual the first part of it is the

REPORT OF THE ENGINEER OF PUMPING WORKS.

PUMPING DEPT. WATER WORKS,
CHICAGO, *April* 15, 1870.

E. S. CHESBROUGH, ESQ., *City Engineer:*

SIR: I present herewith my Sixteenth Annual Report of the operations of this department, it being for the year ending March 31, 1870.

The total quantity of water pumped during the year, was 6,801,146,720 gallons, an increase of nearly 1,427,000,000, or about 26½ per cent. over that pumped the previous year.

The daily average during 1868–9 was nearly 14¾ million gallons, although during the month of March, the average was about 16½ millions.

During the past year the daily average was 18⅞ millions, and throughout the month of July it was over 20½ millions.

The following record will show the operations of the works each month during the past year:

OPERATIONS OF ENGINES AND BOILERS.

MONTHS.	No. of Days.	No. of Hours run per month.	Average No. of Hours run per mo.	Total Revolutions per month.	Average No. of Revolutions per day.	Total No. of Gallons Water Pumped per month.	Average No. of Gallons Water Pumped per day.	Total Pounds of Coal consumed per day FOR PUMPING.	Average Pounds of Coal consumed per day. FOR PUMPING.
1869		H. M.	H. M.						
April	30	720 00	24 00	522,843	17,428	515,558,836	17,185,294	1,252,720	41,757
May	31	744 00	24 00	737,327	23,784	511,024,720	16,484,668	1,335,130	43,068
June	30	720 00	24 00	793,013	26,433	537,626,771	17,920,892	1,353,260	45,108
July	31	743 35	23 59	776,230	25,039	641,359,425	20,689,014	1,610,740	51,959
August	31	744 00	24 00	797,368	25,721	626,549,674	20,211,279	1,664,680	53,699
September	30	720 00	24 00	834,952	27,831	592,379,232	19,745,974	1,497,280	49,909
October	31	744 00	24 00	767,785	24,767	556,909,988	17,964,838	1,422,310	45,881
November	30	720 00	24 00	631,272	21,042	550,754,730	18,358,491	1,440,710	48,023
December	31	744 00	24 00	695,908	22,448	569,074,149	18,357,230	1,440,460	46,474
January, 1870	31	743 45	23 59¼	740,532	23,888	548,247,452	17,685,401	1,535,260	49,524
February	28	672 00	24 00	565,669	20,203	525,713,115	18,775,468	1,279,300	45 687
March	31	743 33	23 59	791,019	25,516	625,948,628	20,191,890	1,643,330	53,001
Totals	365	8,758 53	286 57¼	8,653,918	284,100	6,801,146,720	223,570,439	17,475,180	574,090
Gen'l Avg. per Mo.		729 54	23 56	721,160	23,675	566,762,227	18,630,870	1,456,265	47,840
Gen'l Avg. per Day		23 59		23,709		18,633,278		47,877	

It will be seen by the foregoing table, that engines have been stopped but 67 minutes during the year, the total running time being 8,758$\frac{13}{60}$ hours. The following amount of coal has been received during the past year:

	TONS.	LBS.
On hand April 1, 1869	142	00
Received of Hammondsville Strip Vein	1347	1610
" Willow Bank	7534	880
" Otter Creek	121	100
" Hocking Valley	104	940
" Briar Hill	54	200

	TONS.	LBS.		
Of these amounts there has been used for pumping, heating buildings, etc	8737	1180		
For Work Shop, Pipe laying, etc	456	550		
On hand April 1, 1870	110	000		
	9303	1730	9303	1730

The expenses due to pumping during the past year were as follows:

Salaries of Engineers	$ 7,180 00
" Firemen and others	8,186 27
8737$\frac{1180}{2000}$ tons of coal at an average of 6\frac{93}{100}$	60,551 40
588$\frac{3}{4}$ gallons of oil	853 99
826 pounds of tallow	106 08
Cotton waste	185 75
Packing	96 34
Small stores	140 89
Gas for lighting Works	708 07
Repairs on Engines and Boilers	1,639 65
Total	$79,648 44
Cost of delivering water per million gallons	$11 71

The following tables will show the quantity of water pumped each month, for the past twelve years; also the total quantity pumped each year, together with the daily and annual increase, etc.

TABLE SHOWING QUANTITY OF WATER PUMPED EACH MONTH, FROM JAN, 1, 1858, TO APRIL 1, 1870.

MONTHS.	1858.	1859.	1860.	1861.	1862.	1863.	
January.....	81,538,179	106,905,665	132,284,454	137,651,918	151,971,047	169,900,255	
February....	69,426,515	106 401,412	130.800,720	142.071.067	168,931,783	158.108,450	
March.....	82,677,463	102.415.983	150.331,680	135,576,447	192,937,942	159,930,404	
April.....	82.600,782	89.994.235	132.930,546	128,371,178	170,081,570		
May.....	82,279,920	116,007,263	141,171,078	150,489,168	181,483,032	Hereafter the year commences on the first day of April.	
June.....	90,211,505	113,098,416	148 197,024	155,996,352	199,118,518		
July.....	101,670,786	133,800,336	166,394,640	147.182,793	209,215,872		
August.....	107,176 652	123.266.556	152,427,690	168.602 494	195,588,295		
September...	108,534,540	131,735,847	132,272,202	152,710.186	186,902,888		
October.....	101,046,605	141,527,040	148.710,195	149,362,166	199.045,045		
November...	86 385,840	127,342,018	150.493.248	153,879,648	187,002,720		
December....	98,316.722	122,653,139	130,773.075	145,261 272	175,006,027		
Total.....	1,091,865,459	1,415,147,910	1.716,786,552	1,767,154 689	2,217,279,739	487,939,109	

MONTHS.	1863–4	1864–5.	1865–6.	1866–7.	1867–8.	1868–9.	1869–70.
April.....	173,519,952	178,013,170	189,131,468	260,207,901	281.904,710	376,430,083	515,558,836
May.....	193.119,348	201,471,216	212,575,920	278,006,304	282,813,318	402,382,583	511,024 720
June.....	194,255,701	230,814 576	249,935,040	271,415,472	318,358,925	422.909.052	537,626,771
July.....	209,332,677	223.227,723	254,045,040	310,687,104	363,322,276	505,513.404	641,359,425
August.....	217,561,920	257,109,360	255.641.034	299.800,032	375,441,736	482,160 940	626.549,674
September...	217,229,652	237,137,038	266,145,900	262.016,784	354.965,654	447,213,481	592,379.232
October.....	185,678.001	191,542,516	246,406 639	264,920,802	377,585,973	456,278,707	556,909,988
November...	176,132,600	165,033,042	200,101,293	224,726,521	350,800,232	430,887,264	550,754,730
December....	199.592,696	208,044,966	192,616,708	211.366,383	378,710,850	466 284,049	560,074,149
January.....	209,884,992	232.131.600	236 844,455	259,410,174	380,912,240	457.504,543	548,247,452
February....	176,088,647	189,244,751	227,597,773	257.166,480	380,867,239	418,212,220	525 713.115
March.....	183.712,268	209,569,260	246,776,084	269,036.652	386,108,511	508 848,250	625.948 628
Total.....	2,336,108,454	2,523,389,218	2,777,817,349	3,168.760,609	4,231,791,659	5,374,624,576	6,801,140,720

TABLE SHOWING TOTAL QUANTITY OF WATER PUMPED, TOGETHER WITH ANNUAL AND DAILY INCREASE.

ALSO THE GREATEST DAILY AVERAGE FOR A SINGLE MONTH FOR THE FOLLOWING YEARS:

YEARS.	Total Quantity Pumped. GALLONS.	Annual Increase. GALLONS.	Average Daily Quantity Pumped. GALLONS.	Average Daily Increase. GALLONS.	GREATEST DAILY AVERAGE. MONTH.	GALLONS.
1858	1,091,865,459		2,991,413		September.....	3,617,818
1859	1.415,147,910	323,282,453	3,877,119	885,706	October.....	4,565 388
1860	1,716,786.552	301,338 642	4,703,525	826,406	July.....	5,367.569
1861	1,767.154,689	50,368,137	4,841,520	137,995	August.....	5.438,790
1862	2,217,279 739	450,125 050	6,074,739	1,233.219	July.....	6,748,899
1863	2,336.108.454	118,128,715	6,400 298	325.559	January.....	6,770,483
1864	2.523.339.218	187.230,764	6,913,259	512,961	August.....	8,293,850
1865	2,777,817.349	254,478.131	7.610,459	697 200	September.....	8,871,530
1866	3.168,760.609	390.943.260	8,681,536	1.071,077	July.....	10.022,164
1867	4,231,791,659	1,063,041,050	11,562,273	2,880.737	March.....	12,455,113
1868	5,374,624 576	1,142.832,917	14,724,999	3,162.726	March.....	16 414,460
1869	6.801,146,720	1,426,522,144	18,633,278	3.908,279	July.....	20,689,014
Average for 12 years..	2,951,818.578	475,690,105	8,084,535	1,303,488		9,104,590

TABULAR STATEMENT OF OPERATIONS OF EACH ENGINE.

ENGINES.	Hours and Minutes.	Total Revolutions.	Total Gallons Water Pumped.
	H. M.		
'53.....	5,381 6	3,095,045	1,605,709,340
'57.....	3,634 16	2,111,406	1,722,907,295
'67.....	5,231 33	3,447,467	3,472,530,085
Totals.....	14,246 55	8,653,918	6,801,146,720

SHOPS.

During the year there have been manufactured of new fire hydrants 292, and of new stop valves, 123, viz:

37	4 inch,	11	12 inch,
36	6 inch,	4	16 inch,
27	8 inch,	8	24 inch.

In addition to these, ten new drinking hydrants have been made, and the usual amount of repairing for streets, bridges and other city departments.

New tools, fixtures and patterns have been added to the shop, costing.....		$ 819.00
Value of tools, etc., previously reported.....		4,300.00
Total cost of tools.....		$5,119.00
Cost of coal, oil, operating shop, etc..	$1,194.28	
Superintendence.....	750.00	
Total.....	$1,944.28	

Deducting this expense, together with 8 per cent. interest on total cost of tools, and 4 per cent. depreciation of same, and estimating the value of work done at considerably less than current prices, the nominal net earnings of the shop for the year amounts to $5,853.74.

There are remaining on hand of

New Fire Hydrants	55
" Four inch Valves	11
" Six inch "	5
" Eight inch "	8
" Twelve inch "	3
" Twenty-four inch Valves	4

The value of these, together with raw material on hand, including finished wood work, lumber, etc., is	$6,649.11
Add value of tools	5,119.00
Total value of stock in shop	$11,768.11

During the year a portion of the patterns belonging to the city were destroyed by fire, at the foundry of N. S. Bouton & Co.; they have been replaced by new ones.

CONDITION OF THE WORKS.

No extensive repairs have been made during the past year. The engines are in as good order as can be expected, in view of their almost constant running.

The principal expenditure for repairs has been upon the boilers. One of those in the north wing has been in use over seventeen years; its general condition is such that it should be replaced by a new one, as we require all the boiler capacity we have, which should be of a reliable character.

The two south boilers have been in use thirteen years; they are at present in fair order, and may be relied upon until their removal to make way for the boilers to accompany the proposed new engine.

The city has not been wholly deprived of water during the year, although by the action of the ice at the Lake Crib, on the morning of the 24th of December last, the supply was seriously threatened; and the disaster to the river pipe, at Chicago avenue crossing, on the 18th of August following, rendered the supply to the West Division quite inadequate to the public wants.

Some improvements of a permanent character have been made in the engine room, and at other points. The fronts of engines 53 and 57 have been fitted with new iron floor-plates and wheels for operating throttle and other valves; also brass hand-rail extending around the working parts.

The old inlet-pipe has been filled with masonry several feet from its connection with the pump-well, and a new waste-pipe connecting all the air-pumps with it, was put in in June last.

Nearly all the work on buildings, left unfinished at date of last report, has been completed during the year; such as stone steps at main entrance, plastering walls, extending gallery, and pointing outside of walls.

The tower has been plastered and blocked off in the vestibule, the cupola finished, and an additional flight of iron steps put in, leading thereto. Nothing has been done towards the proposed improvement of the surrounding ground, which is far from being in harmony with the character of the buildings.

The large and constantly increasing consumption of water is such that we shall soon reach the limit of the present means of supply. During 1868–9 the daily average was about 14¾ million gallons. On page 60, last annual report, it was predicted that the daily average for the present year would reach 20,000,000; and during the hot season 25,000,000 gallons would be required. The delay in issuing this report enables me to say that even this high estimate falls short of the truth, for during the first three months of the present year, the daily average has reached nearly 21,000,000; one week of this time the daily average was over 23,000,000 gallons, and for certain days, the quantity pumped was over 28,000,000. The constant extension of pipe, and new attachments thereto, will of course have a tendency to increase these figures.

To meet the increase as here anticipated, the Commissioners gave orders for the preparation of plans and specifications for additional pumping machinery, with a capacity to deliver thirty-six million gallons daily.

Drawings and specifications for the machinery have accordingly been issued, and proposals invited for its construction, and it is hoped that the next annual report may announce its near completion; it will be fully described hereafter.

The south wing and pump-well, originally designed for this machinery, are ready to receive it. The construction of foundations, and the extension of branch of main tunnel to the well, will require considerable time, and should be commenced as soon as may be practicable. The whole of the work here alluded to should be carried forward with the utmost dispatch, for until its completion, the present machinery will be closely pressed to meet the demand upon it.

I regret to report the occurrence of an accident at these works which resulted fatally. On the 20th of May last, Mr. Richard Coote, while temporarily engaged in making some measurements in the building, was struck by the engine crank, and so severely injured that he died in consequence on the 31st of the same month.

The deceased was for a number of years connected with the corps of civil engineers, under the Board of Public Works, and was regarded as a gentleman of fine attainments in his profession and highly esteemed by his associates, as well as by those under whom he served.

The unfortunate occurrence is regretted by none more than those connected with this department.

Respectfully,

DE WITT C. CREGIER,

Engineer.

CONSUMPTION.

Mr. Cregier's report shows that rapid increa
tion of water continues to be not only enorm
ing the pumping power at present availab
The new engine recently contracted for, cann
ration in less than a year.

Already the average consumption has reacl
capacity of the two small or old engines. Th
one must sometimes be laid up for repairs,
small ones will be insufficient to meet the ext
hot or very cold weather.

It should be stated here, that the reported
actually pumped has necessarily been obtain
sions of the pumps, and the registered num
As all large pump valves are known to leak s
lar statement probably exceeds, more or les
but this does not affect the comparison of one
A large proportion of the water pumped is v
is any practicable way of preventing it, th
supply occasionally, for a year to come, may

The average daily consumption the past ye
seventy gallons for each inhabitant. During
the average has not been less than eighty, a
on which it would have reached one hundred
ble to meet the demand with the present pu
This shows that the whole city demands, at
warm and dry weather, 30,000,000 gallons f
waste. It may be said that an occasional sho
a good thing to teach the citizens not to was
this would not meet the case, because the leas

who live in the out-lying districts, yet they are the great sufferers.

Mr. Cregier's report shows that the average daily consumption has more than doubled during the last three years. There are satisfactory reasons for a large part of this increase, in the increased number of water takers, but not sufficient to account for the whole of it. So far all estimates of consumption for this city, based upon previous experience, however extravagant they may have appeared, have been more than realized. Of course a change must come sooner or later, but who can tell when?

Great pains has been taken to ascertain the cause of the increased consumption here, and it has been clearly traced to a reckless waste which is not confined to any locality. At first it was hoped that the excessive demand for water might be accounted for by the discovery of one or more large leaks from the water mains into the sewers. These were examined in central business portions of the city, and the discharge from them by night and day carefully measured, but the only thing discovered was an immoderate waste of water every where. Extensive examinations were then made, under the direction of Mr. Woodford, the Assessor, on the private premises of many of the water takers, and enough was ascertained to account for the excessive demand on the pumping works.

Many persons waste from their taps from carelessness, others for the sake of having the water always cool and fresh the instant they wish to drink, others let their fixtures get out of order, and are too careless or penurious to have them repaired.

Experience shows that much plumbing done in past years is very defective. The use of sprinkling hose at forbidden hours, is a large and increasing cause of waste.

If those who needlessly waste simply caused the city so much more expense on their account, the effect, though quite objectionable pecuniarily, would be of much less importance than it now is, for it is impossible, in certain extreme conditions of the weather, to supply the outlying districts of the city at all. Many families and various industries are thus deprived of an absolute necessity, and exposed, in case of fire, to immense loss.

As a very large amount of waste is caused by defective water closets and fixtures, it is suggested that *earth closets* might be advantageously used in those places where ordinary ones are found to be injured by frost or neglect. The prospect of success in this direction, judging from the testimony of competent persons in New Orleans and other cities, might be determined by a moderate experiment in this city.

When it is considered that all waste of water causes not only an increase of annual expenditures, but necessitates enlargements and extensions of the water works earlier than would otherwise be necessary, it will be seen that every citizen hereafter will have a direct interest in preventing this waste.

INLET BASIN.

It is remarkable how long the old breakwater, in front of this basin, continues to protect it. The piles are more decayed than ever, but still stand. Nothing more can be said of the necessities of this basin, than was said last year. As usual, a dredging machine was kept in it all winter, to assist in preserving an open channel to the lake, in case any accident should happen to the tunnel or the crib. A portion of the sand that had accumulated in the basin during the previous season, was dredged out at the beginning of winter.

DISTRIBUTING PIPES.

There were laid during the year ending March 31, 1870, the following main and distributing pipes, viz:

SOUTH DIVISION.

On what Street.	Between what Streets.	Diameter in Inches.	Length in Feet.
Arnold st	Twenty-seventh and Thirty-first	4	2,420
Alley across Dr'bn	Monroe and Jackson st	4	300
Alley " 18th	State and Burnside	4	100
Alley N. from "	Blackwell and Wentworth av	4	100
Burnside st	Twenty-fifth and Twenty-sixth	4	680
Burnside st	Archer av. and North	6	130
Blackwell st	Eighteenth and South	6	100
Butterfield st	Thirty-first and Thirty-third	4	1,060
Bryant st	Vincennes road and West	4	704
Buddan st	Archer av. and South	6	100
Bushnell st	" " "	4	150
Butler st	" " "	6	160
Cottage Grove av	Douglas place and South	6	50
Calumet av	Twenty-first and North	6	154
Cottage place	Thirty-first and South	4	620
Clark st	into E. wing of City Hall	4	125
Clark st	" " "	6	141
Cologne st	Main and Quarry sts	6	850
Dearborn st	Madison and Jackson sts	6	1,200
Eighteenth st	Clark and Butterfield sts	6	200
Eighteenth st	State and Burnside sts	4	320
Fourteenth st	Wabash and Michigan avs	8	414
Gano st	South Park av. and Calumet av	4	360
Indiana av	Twenty-seventh and Thirtieth sts	6	830
La Salle st	into W. wing of City Hall	6	130
Lake av	Douglas place and Wahpanseh av	4	1,400
McGregor st	Wentworth av. and Wallace st	4	2,670
Madison st	Market st. and the river	4	137
Main st	end of pipe and Thirty-first st	6	260
Market st	at intersection of Madison st	8	300
Market st	" Randolph st	8	180
Nineteenth st	Purple and Wentworth av	6	650
Prairie av	Thirty-first and Thirty-third	6	1,400
Prairie av	Cottage Grove av. and Twenty-third st	4	436
Purple st	Twentieth and Twenty-first	6	444
Polk st	Wells st. and the river	4	400
South Water st	Michigan av. and East st	6	414
South Park av	Twenty-second and Twenty-fourth	6	1,282
	Carry forward		21,371

SOUTH DIVISION.—(CONTINUED.)

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in Inches.	Length in Feet.
	Brought forward		21,371
South Park av	Twenty-fifth and Twenty-sixth sts	6	670
Stewart av	at intersection of Archer av	8	190
Twelfth st	the river and eastward	16	168
Twenty-sixth st	Wabash av. and State st	12	630
Twenty-fourth st	State st. and east of Wabash av	6	560
Twenty-fourth st	South Park av. and East	4	125
Twenty-third st	at intersection of South Park av	4	200
Twenty-fifth st	" " "	6	140
Twenty-first st	" Calumet av	6	172
Thirty-third st	Clark and Burnside st	6	600
Thirty-third st	Cottage Grove av. and East	6	604
Thirty first st	Butterfield and Arnold sts	8	570
Thirty-first st	State and Wabash av	8	344
Thirty first st	Cottage place and Cottage Grove av	6	306
Twenty ninth st	Butterfield st. and Wentworth av	6	711
Twenty-eighth st	Michigan and Wabash avs	4	390
Thirteenth st	at intersection of Wabash av	4	210
Vincennes road	Douglas place and South	6	2,300
Wabash av	Twenty second and Thirty-first sts	24	4,600
Wabash av	Thirty-second and South	6	374
Wentworth av	Eighteenth and South	6	100
Wentworth av	Twenty-sixth and Twenty-ninth sts	6	1,150
Wahpanseh av	Vincennes road and Langley st	6	414
			36,899
	Hydrants		1,596
	Total		38,495

WEST DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in Inches.	Length in Feet.
Aberdeen st	Polk and Gurley sts	4	470
Adams st	end of pipe and Reuben	6	1,000
Adams st	Honore and Paulina sts	6	1,216
Ada st	Lake and Madison sts	8	1,520
Augusta st	Milwaukee av. and Will st	6	640
Ann st	at intersection of Lake st	6	240
Alleys acr's D'splns	Adams and Kinzie sts	4	808
Bryan place	Lake and South	6	200
Blair st	Canalport av. and South	4	100
Canal st	Twelfth and Judd sts	6	300
Canal st	at intersection of Washington st	4	200
Centre av	Sixteenth and Evans sts	6	616
Centre av	Fourth and South	6	124
Centre av	Harrison and William sts	6	620
Centre av	Chicago av. and North	8	150
Canalport av	John and W. of Brown st	6	700
	Forward		8,904

WEST DIVISION.—(CONTINUED.)

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in Inches.	Length in Feet.
	Brought forward		8,904
Curtis st	Third and Fourth sts	4	400
Curtis st	Kinzie and Fulton sts	6	820
Chicago av	Carpenter and W. of Reuben st	16	3,900
Chicago av	Paulina and Wood sts	6	780
Carpenter st	Chicago av. and North	8	40
Carpenter st	Fulton and Carroll sts	6	400
Desplaines st	Lake and Kinzie sts	6	980
Dunn st	Kinzie and Northward	6	100
Eleventh st	Morgan and Sholto sts	6	570
English st	Centre av. and May st	4	420
English st	Halsted and Canalport av	4	466
Evans st	" and John sts	6	200
Eighteenth st	Jefferson and Seward sts	6	470
Elston road	Wabansia and North av	6	1,030
Elston road	end of pipe and Armitage road	4	300
Elston road	" " "	6	1,064
Elizabeth st	Randolph and Washington sts	6	440
Fisk st	Sixteenth and Southward	6	60
Forquer st	Canal and East	6	210
Fourth st	Noble and Centre av	6	1,422
Fourth st	Reuben and East	8	140
Fulton st	Robey and Lincoln sts	4	616
Green st	Monroe and Harrison sts	12	2,290
Green st	Lake and South	4	70
Henry st	Blue Island av. and Throop st	4	480
Henry st	Waller and Centre av	4	1,350
Hubbard st	Robey and Oakley sts	6	2,270
Hubbard st	Desplaines and Union sts	6	370
Hamilton st	end of pipe and Southward	4	360
Hamilton st	Jackson and North	4	40
Harrison st	Reuben and Desplaines sts	12	6,190
Halsted st	Meagher and Sixteenth sts	4	350
Halsted st	Sixteenth and Southward	6	220
Halsted st	" Northward	4	398
Hermitage av	Jackson and Southward	6	236
Indiana st	Desplaines and East	6	120
Judd st	Canal and East	6	110
John place	Halsted and West	4	590
Jackson st	at intersection of Green st	8	260
Jackson st	Aberdeen and Centre av	6	650
Jackson st	Hoyne and Leavitt sts	4	514
Jackson st	Lincoln and Hermitage av	6	1,050
Jackson st	Robey and Seeley sts	6	336
Johnson st	Wright and Maxwell sts	6	870
Kinzie st	at intersection of Reuben st	12	117
Kansas st	Loomis and Laflin sts	4	622
Lytle st	Harrison and South	12	1,774
Laflin st	at intersection of Madison st	6	190
Lake st	Western av. and Valentine st	6	850
Loomis st	Adams and Northward	6	134
	Forward		46,493

WEST DIVISION.—(CONTINUED.)

On what Street.	Between what Streets.	Diameter in Inches.	Length in Feet.
	Brought forward		46,493
Lincoln st	Kinzie and Hubbard sts	6	370
Luke st	Halsted and Union sts	4	450
Madison st	Western av. and Staunton st	8	600
Maxwell st	Newberry and Waller sts	6	1,090
May st	Hubbard and Erie sts	6	1,250
Margaret st	Henry and Catherine sts	6	280
Monroe st	Robey and Lincoln sts	4	670
Newberry st	Twelfth and Maxwell sts	4	430
Noble st	Bradley and Chicago av	8	3,130
O'Neill st	Halsted st. and Westward	4	290
Oakley st	Lake and Fulton sts	6	580
Paulina st	Mitchell and Sixteenth st	6	1,340
Paulina st	Wabasia av. and South	6	200
Paulina st	Monroe and Adams st	6	556
Peoria st	Lake and South	4	240
Quincy st	Clinton and Jefferson sts	6	400
Reuben st	Bauwans and Blackhawk sts	6	690
Reuben st	Warren and Washington sts	6	260
Reuben st	Lake and Augusta sts	24	5,065
Reuben st	Cornelia and Division sts	6	1,530
Reuben st	Chicago av. and First st	6	320
Reuben st	Indiana and Fourth sts	6	500
Reuben st	Lake st. and N. of Kinzie st	6	1,000
Rebecca st	Centre av. and Morgan st	4	1,550
Ruble st	Canalport av. and North	6	63
Redfield st	Elston road and McHenry st	4	750
Sixteenth st	Centre av. and Nutt st	8	1,214
Sixteenth st	Morgan and Union sts	8	1,620
String st	Canalport av. and North	6	100
Sangamon st	Harrison and Tyler sts	4	430
Sangamon st	Randolph and Washington sts	6	460
Sangamon st	Lake and Fulton sts	6	440
School st	at intersection of Desplaines st	4	150
Seward st	Canalport av. and Southward	4	114
School st	at intersection of Clinton st	4	150
School st	" Jefferson st	4	150
School st	Canal st. and Westward	4	216
Sebor st	" " Eastward	4	200
St. Johns place	Lake st. and North	4	100
Sheldon st	at intersection of Lake st	6	200
Sheldon st	Madison and Washington sts	6	504
Smart st	Kinzie and Hubbard sts	4	400
Stewart av	at intersection of Eighteenth st	6	200
S. W. Plank road	Washington and North-east	6	175
Twelfth st	The river and Lytle st	16	5,486
Trustee st	Kinzie and Hubbard sts	4	400
Twenty-second st	Halsted and Jefferson sts	6	1,125
Throop st	Harrison and Tyler sts	8	290
Throop st	Adams and Northward	6	134
Tyler st	Throop st. and Centre av	6	640
	Forward		84,995

WEST DIVISION.—(CONTINUED.)

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in Inches.	Length in Feet.
	Brought forward		84,995
Union st	Canalport av. and English st	6	490
Union st	to connect at Twelfth st	8	14
Van Buren st	Morgan and Sangamon sts	6	260
Wade st	Elston road and N. W. R. R. track	4	614
Walsh st	Halsted and Westward	6	87
Washington st	Canal st. and the river	4	500
Walnut st	Hoyne and Western av	4	2,040
Wabansia av	Elston road and Ridgeville road	6	1,800
Western av	Lake and Kinzie sts	8	1,470
Wright st	Wabansia av. and Rawson st	4	700
Winchester st.	Monroe and Adams sts	4	530
W. Water st	to connect at Washington	4	180
			93,680
	Hydrants		3,724
	Total		97,404

NORTH DIVISION.

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in Inches.	Length in Feet.
Alley	West of Larrabee S.W. from Clybourn av.	4	100
Burton place	at intersection of Dearborn st	4	180
Burton place	Clark st. and Eastward	6	100
Block st	North av. and Linden st	4	670
Belden av	Larrabee and Orchard st	4	600
Clybourn av	Halsted and North av	6	550
Clybourn av	end of pipe and Fullerton av	6	390
Centre st	Hurlbut and Mohawk st	6	350
Centre st	Larrabee and Howe sts	6	350
Church st	Blackhawk and North av	4	778
Chesnut st	Dearborn and Eastward	4	140
Chesnut st	Clark and LaSalle sts	6	375
Chicago av	in Water Pipe Tunnel	24	362
Division st	in Water Pipe Tunnel	24	340
Dearborn st	Kinzie and North Water sts	6	316
Dearborn st	end of pipe and North av	4	350
Dayton st	Willow and South	4	172
Dayton st	Clay and North	4	262
Erie st	Pine and West	6	100
Elm st	at intersection of Dearborn st	4	240
Engine House(into)	at City Water Works	4	70
Franklin st	Sophia and Asylum place	4	700
Fremont st	Willow and Clay sts	6	870
Grant place	Clark and La Salle sts	4	420
Huron st	Pine and Westward	6	100
Hammond st	Wisconsin and Menominee sts	4	675
	Forward		9,560

NORTH DIVISION.—(CONTINUED.)

ON WHAT STREET.	BETWEEN WHAT STREETS.	Diameter in Inches.	Length in Feet.
	Brought forward		9,560
Halsted st	Rees and Blackhawk sts	6	400
Halsted st	North av. and Clybourn av	6	475
Hills st	Wells and Eastward	4	60
Hull st	Lincoln and Menominee sts	4	640
Illinois st	Franklin and Kingsbury sts	6	1,120
Kroger st	Sheffield av. and Northwest	4	690
Linden st	Church and Wells sts	4	1,386
Linden st	at intersection of La Salle	4	140
Labar st	Division and Larrabee sts	4	780
La Salle st	North av. and Clark st	6	820
Maple st	Dearborn and Westward	4	140
Menominee st	Church and Sedgwick sts	4	50
North av	Hurlbut and E. of Clark st	8	2,790
North av	at intersection of Dearborn st	6	240
Oak st	at intersection of Dearborn st	4	150
Oak st	Market and Townsend sts	6	775
Oak st	Rush and Larrabee sts	24	3,788
Orchard st	Clybourn and North avs	4	850
Pine st	Hinsdale and Whitney sts	6	300
Pine st	Chicago av. and Northward	6	120
Rush st	Oak and Pearson sts	24	1,154
Sophia st	Clark and Franklin sts	6	290
Schiller st	at intersection of Dearborn st	6	260
Schiller st	La Salle and E. of Clark	6	390
Scott st	Astor place and Lake Michigan	4	330
Sheffield av	Clybourn av. to Clay st	6	1,003
St. S. of Blackhawk	from Clybourn av. Southwest	4	100
" from Division S.	Franklin and Market sts	4	96
White st	Dearborn and Eastward	4	364
White st	E of Wells and Franklin sts	6	600
Whitney st	end of pipe and Pine st	4	150
Wendel st	Wells and Eastward	6	60
Willow st	Dayton and Fremont sts	4	482
Weed st	Clybourn av. and North	4	100
			30,653
	Hydrants		952
	Total		31,605

The whole length of pipe laid in the city during the year, was 167,504 feet—31$\frac{18}{32}\frac{24}{80}$ miles, about 2,436 feet of which was on streets in which the increased demand for water rendered it necessary to take up the smaller and lay down larger sized pipe.

The total length of pipe laid in the city to this date, as nearly as can be ascertained, is as follows, viz.:

		Feet.
28	inch cast iron main pipe.....	160
24	" " "	38,231
16	" " "	24,526
12	" " "	21,675
30	" wrought iron river pipe, State st.....	280
24	" " " Rush st.....	530
24	" " " Twelfth st.....	258
12	" " " Adams st.....	176
9	" " " and syphon pipe at Archer av.....	90
10	" cast iron distributing pipe.....	7,862
8	" " " "	126,497
6	" " " "	448,827
4	" " " "	569,005
3	" " " "	28,566
		1,266,683

or 239 miles and 4,763 feet.

The length of 24 inch mains laid in the North Division, and the northern portion of the West Division, has at this date already caused a great improvement in the supply of water to those parts of the city. It is hoped that before the close of the present year there will be a continuous line of 24 inch pipe from the pumping works, along Rush, Oak, Crosby, Division and Reuben streets, to Harrison, with important connections.

On the 18th of August, 1869, the 24 inch river pipe, on the lower side of the Chicago avenue bridge, was struck by an anchor, one fluke of which remained in the pipe, and so badly injured it that it was found best to shut off the water from it altogether, until it could be repaired. Occurring as it did, in a very warm and dry time, and when the State street river pipe was shut off to repair an injury by the driving of a pile, this accident caused more inconvenience and anxiety than had been known before in connection with the water works for ten years. All of the city suffered from a shorter supply than usual, and a

large portion had none at all during the heat of the day, so that if a serious fire had occurred, the consequences might have been deplorable in the extreme. Fortunately, by the aid of divers and a dredge, the anchor was taken out, and in about sixty hours altogether from the time the accident occurred, the regular supply of water to the West Division was restored.

The experience gained up to this time, in the use of wrought iron inverted syphon pipes for conveying water across the river and its branches, led the Board to determine, not only to put no more in, but eventually to replace existing ones with cast iron pipes laid through brick lined tunnels. It is expected that five of these will be completed before the end of the present year, viz:

Under the North Branch, at Chicago avenue.
Under the canal, on Division street.
Under North Branch, " "
Under South Branch, at Adams street, and
Under the south fork of South Branch, on Archer av.

QUALITY OF THE WATER.

This has continued to be quite as good as during the year before. A careful record of the temperature of the water at the crib was kept during the year, and it shows a variation of forty degrees between winter and summer, in that which was taken from within the cylinder.

These observations, together with previous experience, settle beyond all doubt, that we must expect, during protracted seasons of very warm weather, a higher temperature of the water furnished to the city than was expected before the completion of the Lake Tunnel, or than is agreeable to many persons. Some supposed the water would be nearly ice cold throughout the summer, but a little reflection will show that this was unreasonable.

HYDRANTS.

During the year ending April 1, 1870, the following new hydrants were established, viz:

SOUTH DIVISION.

1 S.W. corner Arnold and Twenty-seventh sts.
1 S.W. " " Twenty-ninth sts
1 S.W. " " Thirtieth sts.
1 S.W. " " Thirty-first sts.
1 S.W. " Archer av. and Buddan st.
1 S. E. " " " Twenty-second st.
1 North side of Archer av., between Purple and Twenty-first sts.
1 S.W. corner Burnside and Twenty-fifth sts.
1 N.E. " " Twenty-second sts.
1 N.W. " " Twenty-sixth sts.
1 N.W. " " Archer av.
1 N.W. " Butterfield and Thirty-second sts.
1 N.W. " " Thirty-third sts.
1 North side Bryant st., west end of pipe.
1 S.W. corner Bushnell and Archer av.
1 S.W. " Butler "
1 in Court House yard.
1 N.W. corner Calumet av. and Twenty-first st.
1 S. W. " Cottage place and Thirty-first st.
1 West side of Cottage place, at south end of pipe.
1 N. E. corner Clark and Fourteenth sts.
1 S.W. " Ellis av. and Douglas place.
1 S.W. " Eighteenth st. and Alley bet. Stewart and Wentworth avenues.

1 S.W. corner Dearborn and Monroe sts.
1 S. E. " Finnell and Archer av.
1 N.E. " of the Illinois Central Railroad Depot.
1 S.W. " Lake av. and Douglas place.
1 N.W. " " Wahpanseh av.
1 N.W. " McGregor st. and Wentworth av.
1 N.W. " " Buddan st.
1 N.W. " " Stewart av.
1 N. E. " " Butler st.
1 S. E. " Market and Madison sts.
1 S. E. " " Randolph sts.
1 N.W. " Main and Thirty-first sts.
1 N.W. " Nineteenth and Blackwell sts.
1 N. E. " " Purple sts.
1 N.W. " " Wentworth av.
1 S. W. " Prairie av. and Twenty-ninth st.
1 N.W. " " Twenty-fourth st.
1 S.W. " " Thirty-first st.
1 S.W. " " Thirty-third st.
1 N.W. " " Twenty-third st.
1 S.W. " " Thirty-second st.
1 S.W. " " Cottage Grove av.
1 East side of Prairie av., bet. Nineteenth and Twentieth sts.
1 N.W. corner South Park av. and Twenty-sixth st.
1 N.W. " " " Twenty-third st.
1 N.W. " Twenty-eighth st. and Michigan av.
1 N. E. " Twenty-ninth and Clark sts.
1 North side of Thirty-third st., at east end of pipe.
1 N.W. corner Twenty-third st. and Michigan av.
1 S.W. " Vincennes road and Wahpanseh av.
1 West side of " " at south end of pipe.
1 S.W. corner " " and Bryant st.
1 N.E. " Wentworth av. and Twenty-eighth st.
1 N.W. " " " Twenty-ninth st.
1 S.W. " " " Twenty-seventh st.

58 Total in South Division.

WEST DIVISION.

1 N.W. corner of Adams and Laflin sts.
1 N.W. " " Paulina sts.
1 S.W. " " Hamilton sts.
1 S.W. " " Green sts.
1 S.W. " " Jefferson st.
1 N.W. " " Canal sts.
1 N.W. " " Throop sts.
1 S.W. " " Winchester sts.
1 S.W. " " Honore sts.
1 S.W. " Ada and Washington sts.
1 N.W. " " Lake sts.
1 N.W. " Augusta and Will sts.
1 N. E. " " Currier sts.
1 N. E. " " Reuben sts.
1 N.W. " Blackhawk " sts.
1 N.W. " Bunker and Beach sts.
1 N.W. " " Canal sts.
1 N.W. " Bradley and Noble sts.
1 N. E. " Brown and Sixteenth sts.
1 N.W. " Centre av. and Jackson st.
1 S.W. " Canal and Liberty sts.
1 S.W. " " Barber sts.
1 N.W. " " Catherine sts.
1 N. E. " " Forquer sts.
1 N. E. " " Harrison sts.
1 N.W. " " Wilson sts.
1 N.W. " " School sts.
1 N. E. " Clinton and Lake sts.
1 N.W. " " Quincy sts.
1 N. E. " " Carroll sts.
1 N.W. " Chicago av. and Wood st.
1 N.W. " " Samuel st.
1 N.W. " Carpenter and Carroll sts.
1 N.W. " " Second sts.
1 N.W. " " Milwaukee av.
1 S.W. " Curtis and Carroll sts.

1 S.W. corner Curtis and Fulton sts.
1 N.W. " Currier and Wade sts.
1 N.W. " Desplaines and Carroll sts.
1 S.W. " " Hubbard sts
1 N. E. " Ewing and Canal sts.
1 S.W. " Eighteenth and Wentworth av.
1 N.W. " Eleventh and Blue Island av.
1 S.W. " Elston road and N.W.R.R. track.
1 N.W. " " Crossing st.
1 S.W. " " Clybourn place
1 S.W. " " Armitage road.
1 N. E. " " Redfield st.
1 N.W. " " North av.
1 S.W. " Evans and Halsted sts.
1 N. E. " Elizabeth and Randolph sts.
1 N.W. " " Fourth sts
1 N.W. " Fourth and Centre av.
1 N.W. " Fig and Wade sts.
1 S. W. " Green and Lake sts.
1 N.W. " Henry and Blue Island av.
1 N.W. " " Margaret sts.
1 N.W. " " Waller sts.
1 N. E. " " Centre av.
1 N.W. " Hubbard and Oakley sts.
1 N.W. " " Robey sts.
1 N.W. " " Leavitt sts.
1 N.W. " " Hoyne sts.
1 S.W. " " Lincoln sts.
1 N.W. " St. John place and Halsted st.
1 N. E. " Jefferson and Quincy st.
1 N.W. " " Kinzie sts.
1 N.W. " " Twenty-second sts.
1 N.W. " Jackson and Wood sts.
1 N. E. " " Clinton sts.
1 S. W. " " Hermitage av.
1 N.W. " " Lincoln sts.
1 N.W. " " Seeley sts.
1 N.W. " Johnson and Wright sts.

1 N. E. corner Johnson and Sixteenth sts.
1 N. E. " Kansas and Laflin sts.
1 N.W. " Kinzie and Union sts.
1 S.W. " Lake and Peoria sts.
1 N.W. " " Seymore sts.
1 N.W. " " Cossett sts.
1 N.W. " Lumber and Halsted sts.
1 N.W. " May and Fourth sts.
1 N.W. " " Sixteenth sts.
1 N.W. " McHenry and Redfield sts.
1 N.W. " Madison and Stanton sts.
1 N.W. " Maxwell and Morgan sts.
1 N.W. " Monroe and Lincoln sts.
1 N.W. " " Clinton sts.
1 N.W. " " Paulina sts.
1 S. W. " " Winchester sts.
1 N. E. " Nebraska and Laflin sts.
1 N.W. " Noble and Division sts.
1 N. E. " " Fry sts.
1 N.W. " " Cornelia sts.
1 N.W. " " Chapin sts.
1 N.W. " " Fourth sts.
1 N.W. " Nineteenth and Wentworth av.
1 N.W. " O'Neill and Halsted sts.
1 N.W. " Oakley and Walnut sts.
1 N.W. " Paulina and Wabansia av.
1 N. E. " Rebecca and Morgan sts.
1 N.W. " " Centre av.
1 N. E. " " Margaret sts.
1 S.W. " Ruble and Canalport av.
1 S.W. " Reuben and Division sts.
1 S.W. " " Jane sts.
1 S.W. " " Emily sts.
1 N.W. " " Walnut sts.
1 On Redfield st., at the Rolling Mills.
1 N.W. corner Sangamon and Tyler sts.
1 S. E. " " Randolph sts.
1 S. E. " String and Canalport av.

1 N. E. corner Smart and Kinzie sts.
1 N.W. " Sixteenth and Morgan sts.
1 N. E. " " Newberry sts.
1 N. E. " Sloan and Nebraska sts.
1 N.W. " " N. W. Railroad track.
1 N. E. " Seventeenth and Halsted sts.
1 S.W. " Seward and Canalport av.
1 N.W. " Trustee and Kinzie sts.
1 S. E. " Twelfth and Lumber sts.
1 N.W. " Throop and Henry sts.
1 N. E. " Union and Twenty-second sts.
1 N. E. " Van Buren and Morgan sts.
1 N. E. " Wade and N. W. R. R. track.
1 N.W. " Walsh and Halsted sts.
1 N.W. " West Water and Kinzie sts.
1 N.W. " Western av. and Kinzie st.
1 N.W. " " Fulton st.
1 N.W. " Wabansia av. and N.W. R. R. track.
1 N.W. " " Reuben st.
1 N. E. " Wright and Rawson sts.
1 N.W. " Walnut and Western av.

133 Total in the West Division.

NORTH DIVISION.

1 N.W. corner Belden av. and Larrabee st.
1 S. W. " Church st. and North av.
1 N. E. " Centre and Mohawk sts.
1 N.W. " Church and Blackhawk sts.
1 N. E. " Dearborn and Indiana sts.
1 S. W. " " North av.
1 N.W. " Erie and Sedgwick sts.
1 N.W. " " Townsend sts.
1 N.W. " Franklin st. and Asylum place.
1 N.W. " " Linden sts.
1 N.W. " Fremont and Clay sts.
1 On Huron, west side of Roberts st.

1 N.W. corner Hammond and Wisconsin sts.
1 N.W. " " Menominee sts.
1 N. E. corner Hill and Wells sts.
1 N. E. " Indiana and "
1 East side of Kroger st., at north end of pipe.
1 N.W. corner LaSalle and Linden sts.
1 N. E. " Linden and Franklin sts.
1 N. E. " North av. and "
1 N. E. " Ohio and Wells sts.
1 N. E. " Pearson and Wells sts.
1 S. E. " Pine and Huron sts.
1 N. E. " " Indiana sts.
1 N.W. " " Ontario sts.
1 N.W. " Sophia and Franklin sts.
1 N.W. " street S. of Blackhawk and Clybourn av.
1 S.W. " Sheffield av. and Kroger st.
1 N.W. " Wells and Ontario sts.
1 N. E. " " Illinois sts.
1 N. E. " " White sts.
1 N. E. " Wendel and Wells sts.
1 N.W. " Willow and Fremont sts.

33 Total in the North Division.

Making 224 in all, which, together with those previously in, would give 1,294 hydrants in the city at this date. 162 hydrants had, for various reasons, to be taken out and renewed during the year. 125 were frozen, and had to be thawed out during the winter.

On all new lines of pipe, a hydrant is put in at every street crossing, and on every street that is paved this is done. Originally the plan was to put one at every second corner.

STOP-COCKS.

The following Stop-cocks were put in during the year, viz:

SOUTH DIVISION.

1	4	inch,	Arnold street, south line of Thirty-first street.
1	6	"	Buddan " " " Archer avenue.
1	6	"	Court House supply pipe, east line La Salle street.
1	4	"	" " " west wing of City Hall.
1	6	"	" " " west line of Clark street.
1	4	"	" " " east wing of City Hall.
1	4	"	Cottage place, south line of Thirty-first street.
1	6	"	Clark street, south line of Thirty-third street.
1	6	"	Dearborn street, north line of Adams street.
1	4	"	Ellis avenue, south line of Douglas place.
1	4	"	Lake avenue, " "
1	4	"	Madison (north side of st.) west line of Market street.
1	4	"	" (south side of st.) " "
1	4	"	Polk street, west line of Wells street.
1	6	"	Prairie avenue, south line of Thirty-first street.
1	6	"	Reuben street, " Archer avenue.
1	6	"	South Park avenue, " Twenty-second street.
1	16	"	Twelfth street, east of the bridge.
1	8	"	" " " " blow off.
1	12	"	Twenty-sixth street, east line of Wabash avenue.
1	12	"	" west " "
1	6	"	Twenty-ninth street, east line of Clark street.
1	8	"	Thirty-first street, " "
1	6	"	Thirty-third street, " "
1	6	"	Twenty-fourth street, " State street.
1	6	"	Vincennes road, south line of Douglas place.
1	24	"	Wabash avenue, south line of Twenty-second street.
1	8	"	" north line Twenty-third st., blow off.
28			Total number in the South Division.

WEST DIVISION.

1	6	inch,	Adams street, west line Reuben street.	
1	6	"	" " Morgan street.	
1	6	"	" " Lincoln street.	
1	8	"	Ada street, north line Randolph street.	
1	6	"	Augusta street, west line of Reuben street.	
1	6	"	Canalport avenue, east line of Ruble street.	
1	6	"	Canal street, south line of Twelfth street.	
1	6	"	Centre avenue, south line Sixteenth street.	
1	8	"	" north line Chicago avenue.	
1	8	"	" south line "	
1	16	"	Chicago avenue, west line Reuben street.	
1	16	"	" east " "	
1	8	"	" west " "	blow off.
1	6	"	" west " "	
1	6	"	" east " "	
1	6	"	" east line of Noble street.	
1	6	"	" west " "	
1	16	"	" west " Halsted street.	
1	6	"	Dunn street, north line of Kinzie street.	
1	6	"	Elston road, north line of North avenue.	
1	4	"	English street, west line of Halsted street.	
1	6	"	Evans street, " "	
1	6	"	Fisk street, south line of Sixteenth street.	
1	6	"	Fourth street, west line of Elizabeth street.	
1	6	"	" west line of Centre avenue.	
1	8	"	" east line of Reuben street.	
1	8	"	" west " " "	
1	6	"	Fulton street, west " " "	
1	12	"	Green street, south line of Adams street.	
1	4	"	Hamilton street, south line " "	
1	12	"	Harrison street, east line of Reuben street.	
1	12	"	" west line of Desplaines street.	
1	4	"	Halsted (east side), south line of Meagher street.	
1	4	"	" (west side), " " "	
1	4	"	" (west side), north line of Sixteenth street.	
1	4	"	" (east side), " " "	

1 6 inch, Jackson street, west line of Lincoln street.
1 8 " " " west line of Green street.
1 8 " " " east line of "
1 4 " John place, west line of Halsted street.
1 12 " Kinzie street, east line of Reuben street.
1 12 " " " west " "
1 6 " Laflin street, south line of Adams street.
1 6 " Lake street, west line of Western avenue.
1 12 " Lytle street, south line of Harrison street.
1 6 " Loomis street, north line of Adams street.
1 4 " Lumber street, west line of Halsted street.
1 4 " " " south line of Twelfth street.
1 8 " Madison street, west line of Western avenue.
1 8 " Morgan st., in the branch bet. 8 in. and 12 in. pipes on Harrison street.
1 8 " Morgan st., in the branch bet. the 8 in. and 16 in. pipes on Twelfth street.
1 8 " Morgan street, south line of Twelfth street.
1 4 " Monroe street, west line of Lincoln street.
1 4 " Newberry avenue, south line of Twelfth street.
1 8 " Noble street, north line of Division street.
1 8 " " north line of Chicago avenue.
1 4 " O'Neill street, west line of Halsted street.
1 24 " Reuben street, north line of Chicago avenue.
1 8 " " " " " blow off.
1 6 " " south line of Kinzie street.
1 6 " " north " " "
1 4 " Smart street, north " " "
1 6 " String street, north line of Canalport avenue.
1 8 " Sixteenth street, west line of Centre avenue.
1 8 " " " " Halsted street.
1 8 " " " east line of "
1 6 " Samuel street, north line of Chicago avenue.
1 16 " Twelfth street, west side of the bridge.
1 8 " " " " " blow off.
1 16 " " west line of Canal street.
1 8 " " " "
1 4 " Trustee street, north line of Kinzie street.

1 8 inch, Throop street, north line of Harrison street.
1 6 " " north line of Adams street.
1 8 " Union street, in the branch between the 8 in. and 16 in. pipes on Twelfth street.
1 6 " Walnut street, west line of Reuben street.
1 4 " Washington street, (north side) west line Canal st.
1 4 " " " (south side) " "
1 6 " Walsh street, west line of Halsted street.
1 6 " Wood street, north line of Chicago avenue.
1 8 " Western avenue, north line of Kinzie street.
1 6 " Wabansia avenue, west line of Reuben street.
1 4 " Winchester street, south line of Adams street.

83 Total number in the West Division.

NORTH DIVISION.

1 4 inch, Block street, north line of North avenue.
1 6 " Clybourn avenue, north line "
1 8 " Clark street, " "
1 6 " " north line of Schiller street.
1 4 " Church street, south line of North avenue.
1 24 " Division st., at east end of Canal pipe-tunnel.
1 24 " " west " "
1 6 " Halsted street, south line of Weed street.
1 8 " North avenue, west line of Sedgwick street.
1 6 " Pine street, north line of Chicago avenue.
1 6 " White street, west line of Wells street.

11 Total number in the North Division.

In all 122, making, together with those previously in, 623 Stop-cocks in the city to April 1, 1870. Eleven Stop-cocks had to be renewed during the year.

Stop-cock districts which were originally very large, have in some cases been divided up into much smaller ones, and this system is to continue until all are made conveniently small. This is a necessity, both for the convenience of the citizens, and to

avoid danger in case of fire. This will enable the Board to put in more effective fire hydrants, especially in the business parts of the city, without exposing large districts to fire while putting them in.

LAKE TUNNEL.

The Lake Tunnel has continued to supply the city during the year, satisfactorily and uninterruptedly, except for a few hours on the 24th of December, when a partial stoppage was caused by anchor ice. Fortunately this was not felt in the city, and by constant watching night and day, in very cold weather during the rest of the winter, a recurrence of this evil was prevented.

In consequence of an unexpected amount of sediment being on the screen frames in the gateways of the lake shaft, it was feared that an extensive deposit might be forming in the tunnel. Mr. P. E. Falcon, the diver, was employed to examine each end of the tunnel. He found a considerable deposit in the sumps at the bottoms of the lake and land shafts, a very few inches in the tunnel extending only about 12 feet from each shaft, and then for a little over 200 feet from each shaft; as far in as he went, he found the tunnel perfectly clear of deposits on the bottom. He noticed, however, a great many small and delicate stalactites on the top and sides.

PROPOSED NEW WATER

Plans and estimates, and a report on ther
Board to the City Council, Oct. 15, 1869,
proceedings of Feb. 7, 1870, of the latter b

In consequence of a doubt in the mind
citizens as to the propriety of proceeding
present, a short review of the subject may
here.

The propriety of constructing large elevat
cussed when the works were under the care
Water Commissioners. Mr. McAlpine, their
stated that the conclusion arrived at was, t
cheaper and better for the city to make dupl
than to erect such reservoirs. Both experier
under the present Board, have only tended
clusion. Accordingly, when the Lake Tu
struction, provision was made for its extens
dreaming, however, that its use would be
But the rapid increase of consumption, the
large portion of the West Side, which existe
and especially the break in the Chicago ave
City Council to call upon the Board for pl
of the Lake Tunnel to the West Side and
pumping works. Hence the above mentio
estimates of the first cost and future mainte
six, seven and eight feet in diameter were
discussion between the Board and a cor
Council, the seven feet size, with a termi
the South Branch, west of Halsted street,
the City Council, and adopted by the latter
nel could be made to supply, under a tota

50,000,000 gallons daily, or under twenty-eight feet head, 100,000,000 gallons daily.

In providing for such large amounts of water, the wants, not merely of the present, but those of the future for a reasonable time, have been considered. Hitherto all estimates for the future have been so far exceeded that improvements and enlargements made under them have proved inadequate almost as soon as completed. To avoid a constant repetition of this state of things, it was thought best to make the tunnel large enough for twenty years to come, according to a moderate estimate of future consumption. But if the enormous rate of increase of the last three years cannot be checked, then even this new and large tunnel, if carried out, will not have been in operation five years before it will be necessary to commence the construction of additional works to prevent a short supply. The construction of the tunnel does not involve the expenditure of any more than may be necessary for the present and immediate future, in the way of pumping engines and large mains. These can be added to or extended as may be required hereafter.

Perhaps a stronger reason than any yet given for an abundant provision for the future, is the necessity of meeting present and prospective wants of the fire department. When it is remembered that the annual losses by fire in this city have already exceeded $2,000,000 more than once, the question of saving a few hundred thousand dollars in the first cost of new works sinks into utter insignificance, compared with the importance of insuring an abundant supply. If the new pumping engines are made capable of raising water two hundred feet high, it would at all times, and in all parts of the city, be practicable to put out fires in ordinary dwellings by simply attaching hose to the hydrants, if the system of large mains, commenced by the Board, is everywhere carried out, and sufficient power kept at convenient points.

The actual height to which it would be best to raise the water at any particular time, must depend upon the quantity demanded, the points of delivery, and the sizes of the distributing mains, all of which will vary from year to year, and cannot be foretold.

SEWERAGE.

CHICAGO, *April* 30, 1870.

To E. S. CHESBROUGH, Esq.,
City Engineer.

SIR: Herewith I hand you report of sewers built during the past year in the three divisions of the city, with location of the same; of the repairs and cleansing of the sewers, and of the private drains connected with them.

The amount of sewers built has been very large, being about 50 per cent. more than that done any previous year since the beginning of the sewerage work, and amounts to about twenty-six and a half miles.

The most important of the works executed was the main sewer on Douglas place, from the Lake to State street, which will give an outlet to the sewerage of the whole of that part of the city south of Thirty-first street extending west to Clark street. A part of this sewer was built at a depth of twenty feet cutting, in very wet sand, and extraordinary precautions were required in passing some important buildings, to prevent their being undermined. The whole of the work was carried on without any accident, and it was built in a firm, substantial manner. To the contractors, Messrs. Haines & Hallanin, and to the inspector, Mr. George Everett, much credit is due, for the thoroughness of the work. The whole was under the immediate charge of Mr. W. M. R. French, assistant engineer. The cost of this sewer, which is about a mile in length, was not far from $100,000. The tributary sewers to it will not cost more than the average for their respective sizes. The general cost of the sewers built during the year was about ten per cent. less than that of the work done the previous year, and had not so large an amount of work been done simultaneously, the cost would have been still less. It is expected that the work done during the year 1870 will be at quite a reduction in cost.

LENGTH IN FEET OF SEWERS BUILT TO APRIL 1, 1870.

Diameters in feet.	S. DIVISION.		W. DIVISION.		N. DIVISION.		TOTALS THREE DIVISIONS.				
	Previous to April 1, 1869.	From April 1, 1869, to April 1, 1870	Previous to April 1, 1869.	From April 1, 1869, to April 1, 1870	Previous to April 1, 1869.	From April 1, 1869, to April 1, 1870	Totals previous to April 1, 1869.	Totals April 1, 1869, to April 1, 1870	Total Sewers built up to April 1, 1870.	Average cost per foot, 1869–70.	Remarks.
6	1,419	989	1.292		3,895		6,606	989	7,595	$33 36	20 ft. cut in
5	4,988	1,048	30,855	1,320	13,756		49,599	2,368	51,967	28 72 6 65	quicksand. " " "
4½	1,083	1,316	31,569	7,723	6,238	3,377	38,840	12,416	51,256	8 87	11 ft. " "
4	4,317	1,684	24,058	7 396	7,053		35,428	8,479	43,907	6 89	10.5 av. cut.
3½		912	2,083	6,149			2,083	7 061	9,144	5 86	8.3 " "
3	18,977	4 964	7,673	3,291	8,090		34,740	8,255	42,995	4 46	8.8 " "
2½	45,365	4,253	575	2,856	5,870	7,260	51,810	14,369	66,179	3 25	8.0 " "
2½	6,359						6 359		6,359		
2	41 231	14,373	80,057	27,537	57,373	11,637	178,661	53,547	232,208	2 39	7.6 " "
1	80,593	8,235	58,956	17 136	43,316	6,850	178,165	32,221	210,386	1 56	7.0 " "
	204.582	87,173	232,118	73,408	145,591	29,124	582,291	139,705	721,996		
Total by Div's..	241,755		305,526		174,715		$110\frac{1401}{5280}$ Miles.	$26\frac{2425}{5280}$ Miles.	$136\frac{3916}{5280}$ Miles.		

CATCH BASINS AND MANHOLES BUILT.

	Built from April 1, 1869 to April 1, 1870.			Previously Built.	Total.	Average Cost, 1869–70.
	S. Div'n.	W. Div'n.	N. Div'n.			
Catch Basins ..	201	865	205	3,132	3,908	$76.28
Manholes.....	325	423	180	3,875	4,808	18.55

DETAILED STATEMENT OF SEWERS BUILT FROM APRIL 1, 1869, TO APRIL 1, 1870.

SOUTH DIVISION.

LOCATION.			LENGTH OF SEWERS BUILT IN FEET.								
ON WHAT STREET.	FROM	TO	6 ft	5 ft.	4½ ft	4 ft.	3½ ft	3 ft.	2½ ft	2 ft.	1 ft.
Douglas pl. (35th)	Lake Michigan ..	Cottage Grove av	989								
" "	Cottage Grove av	Moonaway place.		1048							
" "	Moonaway place	Forest av.			1816						
" "	Forest av.	Michigan av.				1083					
" "	Michigan av.	State					912				
Deering	So. branch of riv.	Archer av.						1619			
Main.	" "	"						1804			
Archer av	Halsted	McGregor						538			
Twenty-third	Archer av.	Buddan						1003			
"	Buddan	Wentworth av.							768		
South Park av.	Twenty-second.	Twenty-third.							644		
"	Twenty-fifth	Twenty-sixth							695		
"	Thirty-fifth	Northward							865		
State	Twenty-sixth.	Twenty-ninth							1364		
Fourteenth	Michigan av.	Indiana av.							417		
Archer av.	McGregor.	Wallace								742	
"	Halsted	Lime								837	
"	Alley E. of Joseph	Alley E. of Church								2294	
Wentworth av.	Twenty-third.	Alexander								194	
"	Eighteenth	Seventeenth								411	
"	Nineteenth	Twentieth								465	
Buddan	Twenty-third.	Alexander								201	
"	Twenty-second.	Finnell								228	
Seventeenth	Wentworth av.	Arnold								258	
"	Burnside.	Butterfield								234	
Twenty-ninth	South Park av.	Cottage Grove av								656	
Twenty-fifth	Calumet av.	" "								84	
South Park av.	Twenty-ninth	Thirtieth								893	
"	Twenty-third	Twenty-fifth								1279	
Northern av.	South Park av.	Cottage Grove av								201	
Indiana av.	Fourteenth	Sixteenth								1401	
Twenty-fourth	Prairie av	Cottage Grove av								245	
Hanover	Twenty-third.	Bushnell								376	
"	Twenty-fourth.	McGregor								365	
Calumet av.	Twenty-ninth	Thirtieth								892	
Indiana av	"	"								891	
Wabash av	"	"								877	
Michigan av.	"	Southward								874	
Purple	Nineteenth	Twentieth								475	
Hanover	Bushnell	Twenty-fourth									265
Thirteenth	State	Michigan av.									813
Twenty-first	"	Alley E of Prairie									1603
Twenty-third	Prairie av	Calumet av.									408
Twentieth.	State	Prairie av.									1382
Twenty-fourth	"	Wabash av									413
"	Indiana av.	Eastward									227
Twenty-fifth	State	Wabash av.									416
Prairie av.	Twenty-fourth	Northward									268
Fourteenth.	State	Wabash av.									421
Dearborn	Monroe	Jackson									930
Clark	Nineteenth	Twentieth.									397
Twenty-eighth	Michigan av.	Westward.									254
Twenty-fifth.	Wings across South Park av.										85
Twenty-third	" "	"									81
Twenty-ninth	Wings across Calumet & Prairie av's										148
McGlashen	" "	Archer av. North									54
Stewart av	" " "	South									29
Butler	" " "	"									51
Totals—37,178 feet			989	1048	1816	1083	912	4964	4253	14373	8285

WEST DIVISION.

LOCATION OF SEWERS BUILT.			LENGTH OF SEWERS BUILT IN FEET.						
ON WHAT STREET.	FROM	TO	5 ft.	4½ ft	4 ft.	3½ ft	3 ft.	2½ ft	2 ft.
Division	The river	Noble	1320						
Adams	Loomis	Reuben		1328					
Kinzie	Halsted	Morgan		1275					
Centre av	So. branch of river.	Twenty-second		1422					
Van Buren	Loomis	Reuben		1328					
Harrison	Green	Centre av		2370					
Fulton	Reuben	Robey			2801				
Centre av	Twenty-second	Clayton			723				
Lake	Paulina	Robey			1997				
Mitchell & Stewart av	So. branch of river.	Wright			1875				
Fulton	Robey	Leavitt				1330			
Madison	"	"				1329			
Lake	"	"				1331			
Wright	Stewart av	Union				2159			
Milwaukee av	Elston road	Centre av					351		
Fulton	Leavitt	Westward					20		
Madison	"	Western av					1339		
Lake	"	Westward					423		
Wright	Union	Halsted					420		
Eighteenth	Canal	Seward					273		
Sixteenth	Halsted	Newberry					285		
Milwaukee av	Centre av	Will						332	
Canalport av	Eighteenth	Jefferson						651	
"	Halsted	Union						564	
Twenty-second	John	"						1051	
Centre av	Indiana	Hubbard							439
Morgan	"	"							489
"	Fulton	Kinzie							825
Green	Lake	Hubbard							1558
Sangamon	Carroll	Third							2008
Reuben	Madison	Tyler							2336
Ada	Randolph	Washington							496
Throop	Van Buren	Jackson							437
"	"	Tyler							461
Union	O'Brien	Meagher							1815
Jefferson	Twelfth	Maxwell							889
"	Mitchell	Meagher							851
Canal	Sixteenth	Eighteenth							873
Peoria	Van Buren	Tyler							464
Loomis	Madison	Monroe							457
"	Adams	Van Buren							896
Sangamon	Van Buren	Harrison							883
Wood	Madison	Warren							875
Hoyne	Washington	Park av							865
Roby	Madison	Warren							873
Leavitt	Washington	Park av							864
Lincoln	"	"							887
"	Madison	Monroe							709
Oakley	"	Warren							873
DesPlaines	Harrison	Twelfth							2604
Bickerdyke	Chicago av	First							865
Milwaukee av	Will	Augusta							780
Canalport av	Jefferson	Union							846
Bishop court	Madison	Washington							467
Halsted	No. branch of river.	Chicago av							482
"	73 sec. of Chicago av. sewer	Fourth							1402
Centre av	Madison	Monroe							417
Amounts forward			1320	7723	7896	6149	3291	2598	26181

WEST DIVISION—CONTINUED.

LOCATION OF SEWERS BUILT.			LENGTH OF SEWERS BUILT.							
ON WHAT STREET.	FROM	TO	5 ft.	4½ ft.	4 ft.	3½ ft.	3 ft.	2½ ft.	2 ft.	1 ft.
		Amount forward.	1320	7723	7396	6149	3291	2598	26181	
Hubbard	Peoria	Morgan								68
Park av.	Page	Leavitt								1797
Warren	"	"								2640
Depuyster	DesPlaines	Halsted								731
Sebor	Clinton	Jefferson								446
Mather	Canal	"								738
Rickerdyke	First	Southward								132
Kramer	Halsted	Jefferson								1320
Liberty	"	"								1246
Forquar	Canal	W. of DesPlaines.								1320
Mitchell	Union	Eastward								340
Indiana	Milwaukee av.	200 f. E. of DesPl								926
Monroe	Throop	Westward								262
"	Loomis	Eastward								136
Liberty	Canal	Jefferson								720
DesPlaines	Fourth	Northward								140
Lytle	Twelfth	Taylor								882
Sheldon	Madison	Northward								330

WING SEWERS ACROSS STREETS BEING PAVED.

Canalport av.	31 f. E. of Halsted.	27 f. W. of Halsted						130		
Luke	Sewer on "	Westward						65		
Evans	" "	"						68		
Lumber	27 f. E. of Halsted.	25 f. W. of Halsted							120	
Eighteenth	Sewer on "	64 f. W. of "							64	
Ada	" Madison.	Northward							50	
Loomis	" "	Southward							43	
S. Western av	" "	North-easterly							49	
Paulina	6 f. N. of "	6 f. S. of Madison.							88	
Page	Sewer on "	Northward							41	
Wood	" "	Southward							42	
Winchester	" "	"							45	
Robey	" "	"							48	
Seely	" "	"							45	
Hoyne	6 f. N. of "	6 f. S. of Madison.							88	
Western av	" "	" "							86	
Leavitt	Sewer on "	Southward							62	
Oakley	" "	"							42	
Honore	" "	"							42	
Paulina	2 f. S. of Lake.	10 f. N. of Lake.							92	
Page	Sewer on "	Southward							42	
Wood	2 f. N. of "	2 f. S. of Lake							87	
Lincoln	Sewer on "	Southward							47	
Laflin	6 f. N. of Adams.	6 f. S. of Adams							77	
Dunn	Sewer on Kinzie	Northward							56	
Pratt	" Halsted	Westward								49
Ridgley	" "	"								49
O'Neill	" "	"								58
John	" "	"								58
Lisle	" "	Eastward								60
English	" "	61 f. E. & 61 f. W.								122
Mark	" "	Eastward								65
Luke	" "	"								61
Evans	" "	"								61
Seventeenth	" "	"								61
Canalport av	" "	Westward								62
Across Canal st., at Sebor, 54 f. E., Mather 116 f. E. and W from Canal st. sewer, Ewing 120 f. E. and W., Forquar 122 f. E. and W., Dekoven 117 f. E. and W., Bunker 117 E. and W										646
Amounts forward			1320	7723	7396	6149	3291	2856	27587	16041

WEST DIVISION—CONTINUED.

LOCATION OF SEWERS.			LENGTH OF SEWERS BUILT.							
ON WHAT STREET.	FROM	TO	5 ft.	4½ ft	4 ft	3½ ft	3 ft.	2½ ft	2 ft.	1 ft.
		Amounts forward	1320	7723	7396	6149	3291	2856	27587	16041
Judd	15 f. E. of sewer on Canal	20 f. E. of E. line of Canal								45
Wilson	20 f. E. of E line of do	20 f. W. of W. line of do.								85
Liberty	20 f. do. do.	" "								81
Mitchell	Sewer on Canal	20 f. E. of E. line of do								60
Barber	20 f E. of W. line of do	20 f. W. of W. line of do								86
Catherine	" "	" "								116
Meagher	" "	" "								78
May	6 f. S. of S. line of Lake	Northward								32
Elizabeth	" "	"								34
Ada	6 f. N. of N. line of Lake	Southward								14
Sheldon	6 f. S. of S. line of Lake	Northward								26
Bryan place	Sewer on Lake	South-eastward								107
Milwaukee av.	Fulton st. sewer.	N W. and S.E.								106
Quincy	Sewer on Clinton	20 f. W. of W. line of Clinton								62
"	" Jefferson	20 f. E. of E. line of Clinton								64
Alley op. Bishop ct.	" Washington	6 f. N. of N. line of Washington								52
Reuben	" Madison	" "								47
Totals—73,408 feet			1320	7723	7396	6149	3291	2856	27587	17136

NORTH DIVISION

LOCATION OF SEWERS BUILT.

ON WHAT STREET.	FROM	TO
N. Clark & Lincoln av.	North av	Centre
Sedgwick	Centre	Grant place
"	Division	Linden
Larrabee	Blackhawk	"
"	Division	Vedder
North av	Clark	Dearborn
Sedgwick	Linden	Menominee
Larrabee	"	"
"	Vedder	Blackhawk
Granger	Sedgwick	Wells
Goethe	"	"
Sigel	"	"
Schiller	"	"
White	Rush	Cass
Whitney	"	Eastward
Hinsdale	"	Cass
Hobbie	Larrabee	Bremer
Wendell	Wells	Franklin
Elm	"	"
"	Larrabee	Bremer
Oak	"	Market
W. Pearson	Franklin	Wells
E. "	State	Cass
Whiting	Franklin	Market
Hills	Wells	Eastward
Wendell	"	"
White	State	Cass
Cass	Chicago av.	Hinsdale
Franklin	No. of Oak	Division
Bremer	Division	Goethe
Dearborn	North av	Southward
Grant place	Sedgwick	Westward

WING SEWERS ACROSS STREETS BE

Sigel	Sewer on Sedgwick		6 f. W. of W. Sedgwick
Blackhawk	"	"	8 f. do. do
Hills	"	Wells	20 f. do do
Hurlbut	"	Clybourn av.	8 f. N. of N. E. Sedgwick
Rees	"	"	56 f. W. of W. Larrabee
Blackhawk	"	"	N. E. 54 f., S. W.
Halsted	"	"	58 f. S. of S. W. Clybourn av.
LaFayette place	"	Dearborn	4 f. W. of W. Dearborn
Alley W. of Franklin	"	Division	8 f. S. of S. line
Sedgwick place	"	"	15 f "
Sedgwick	"	"	17 f. "
Twomey	"	Sedgwick	18 f. W. of W. Sedgwick
Hein	"	"	4 f. W. of W. line
Sullivan	"	"	6 f " "
Connor	"	"	5 f. " " "
North av.	"	Clark	9 f. " " "
Elm	"	Dearborn	4 f. E. of E. Dearborn
Ohio	"	St. Clair	12 f do. do
St Clair	11 f. S. of S. line of Ohio		11 f. N. of N. line
Halsted	Sewer on Clybourn av.		54 f. N. of N. E Clybourn av.
Mohawk	"	"	30 f. do. do
Hinsche	"	"	51 f. N. E. of do
Langdon	"	"	54 f S. W. of do
Orchard	"	"	50 f. N. E. of do.
Weed	"	"	55 f. W. of do.

Totals—29,124 feet

REPAIRS OF SEWERS.

The following table shows the repairs of sewers, catch basins and covers done during the past year. The effect of the raising to grade and paving of the streets in diminishing the cost of both the repairs and cleansing of the sewers begins to be apparent. Notwithstanding the great increase in the extent of the sewers, the cost of repairs is one-third less than for the previous year, while the cleansing account is nearly $1,000 less.

REPAIRS OF SEWERS, CATCH BASINS AND COVERS FOR 1869–70.

DIVISIONS.	Repairs of Sewers.			Repairs of Catch Basins & Manholes.		Repairs of Covers.		Totals Each Division.
	Size	Ft. rep'd & relaid	Cost.	No. repair'd	Cost.	No. rep'd &resto'd.	Cost.	
	Ft.							
South Division..	2½	106	$585.00	40	$410.97	595	$1485.49	$2,481.46
West Division..	2	150	823.82	53	560.07	588	1470 77	2,854.66
North Division..	2 &1	492	1015.04	18	175.77	399	999 33	2,191.04
Totals		748	$2424.76	111	$1146.81	1582	$3955.59	$7,527.16–1869-70 11,287.08–1868-69

CLEANSING OF SEWERS FOR 1869–70.

METHOD OF CLEANSING.	S. DIVISION.		W. DIVISION.		N. DIVISION.		TOTALS.		
	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Feet Cleansed.	Cost.	Per 100 ft.
By Flushing.....	121,679	$2,523.90	69,230	$1,556.89	40,251	$1,267.31	231,160	$5,348.10	2.31
By Chain Machine	39,861	3,940.30	27,582	3,528.03	9,821	1,888.18	77,264	9,356.51	12.11
Main Sewers, with scrapers.	9,981	472.50	46,156	2 188.49	16 430	745;84	72,567	3,406.83	4 69
Totals—Sewers ...	171,521	6,936.70	142,968	7,273.41	66,502	3 901.33	380,991	18,111.44	Av'g 4.75
Catch Basins cln'd	No. of 1,174	2,678.20	781	2,802.53	780	2,423.01	No. of 2,735	7,903.74	Each 2.89
Total Sewers and Catch Basins ...		$9,614.90		10,075.94		$6,324.34	For 1869-70,	$26,015.18	
							For 1868-69,	26,954.06	

PRIVATE DRAINS.

Permits issued from April 1, 1869, to March 31, 1870:

DIVISIONS.	6 in.			9 in.	12 in.	Total.	Totals previously	Total April 1, 1870.
	Private.	Special Assess't.	Total.					
South	355	438	793	24	13	830		
West	1296	795	2091	17	2	2110		
North	840	194	1034	5	..	1039		
Totals	2491	1427	3918	46	15	3979	15,824	19,803

The above is respectfully submitted.

WILLIAM H. CLARKE,
Principal Assis't Engineer.

Mr. Clarke's report shows the gratifying fact that, notwithstanding the unusual length of sewers laid last year, the expense of maintaining them has not increased. This is attributable mainly to the great increase in length of paved streets. It was observed before that the paving of the streets had an important effect in reducing the cost of cleansing the sewers, but this effect was never so manifest before.

For some time the practicability of still further reducing the cost of cleansing the sewers and catch-basins by the use of steam and the application of the pneumatic process, has been under discussion. Hitherto there have appeared to be practical objections, especially in the sticks and other rubbish admitted into the sewers and catch-basins, but it is hoped that before long the improved pavements and other means, will overcome those objections.

CONDITION OF THE RIVER.

The condition of the North Branch for several years past has been a frequent cause of complaint, and the call for some plan for purifying it is becoming more and more urgent.

The necessity of preventing the river from becoming offensive has been seen from the very commencement of the sewerage system of this city, and was provided for in the plan adopted; but, for reasons it would be useless to discuss here, that portion of the plan has never been carried out. It was hoped that by arranging the sewerage system so as to have but very little filth discharged into the North Branch, it might be many years before it would be necessary to carry out any expensive works to purify that stream. Up to this time it has not received five per cent. of the sewage of the city, and it is very difficult to see why it should be so foul, unless it is caused mainly by the distilleries on its banks. The vigorous measures of the Board of Health seem to have diminished very much the nuisances caused by those establishments, and yet there are offensive peculiarities in the North Branch almost impossible to trace to any other cause.

Of the numerous plans proposed for cleansing the North Branch, four classes may be mentioned, viz:

1st. Intercepting sewers.
2nd. Canals between the river and the lake.
3rd. Reservoirs high up the river.
4th. Artesian wells.

By intercepting sewers, it is proposed to prevent the drainage of the city from being discharged into the river, and thus avoid polluting it. Such sewers should be made near to and parallel with the river. They would necessarily be lower than the lake, and incline towards their outlet, requiring their contents to be

pumped up. Here arises an important question as to whether there should be but one outlet for the whole city, and where that should be. A proper answer to this question must depend upon the right answer to the first, if not to all, of three others, viz:

1st. What is to be the final use or disposal of the sewage of the city?

2nd. What the probable cost of any plan of intercepting sewers?

3rd. The cost of maintenance?

The proper or best disposal of city sewage has been the subject of much inquiry and extensive experiments in Great Britain and on the continent of Europe, during the last twenty years. The course of all these has been observed with great interest here. The result thus far seems to be that no city containing a population of 100,000 or upwards, has been able to utilize the contents of all its sewers in the irrigation of land, and yet, of all the methods hitherto tried, this has by far the greatest number of able advocates, both in England and France. The attempt to manufacture sewage into solid manure has proved a commercial failure. The process of deodorization by means of lime or chemicals is enormously expensive, and has not proved satisfactory in its results. As yet there seems to be no alternative for large cities but to discharge the contents of their sewers into some running or large body of water, and at the nearest point compatible with public health. What the future may develop it is difficult now to foresee, but in the light of experience thus far gained, the strong probability is that the ultimate receptacle of the sewage of this city must be the lake, either from the river, or from the outlets of intercepting sewers. In the latter case, the contents of the intercepting sewers would descend towards the lake, and there be pumped up. If, however, irrigation of the land should ever prove advantageous here, then the intercepting sewers should incline towards the districts to be fertilized, and their contents there pumped up.

The dry earth system, including the use of earth-closets, has some advocates, but is not yet known to have been introduced extensively into any large European city, and does not grow in

favor, as it was hoped would be the case. If this system could be carried out, it would be more applicable than irrigation to a climate like ours, very cold part of the year; but the objection to giving up water-closets, inside of respectable dwellings, for earth-closets, seems to be very great to most persons. Besides, human excrements, though undoubtedly the most valuable portion of the sewage of a city, do not constitute one-fifth part of it. How the remainder is to be successfully treated by the dry earth system, is a problem not yet solved.

The probable cost of a complete system of intercepting sewers for the whole city, would depend upon the district and population it might be determined to provide for. From different trial estimates, it would be safe to say that such a system could not cost much if any less than $3,000,000.

The cost of maintenance would necessarily depend upon the plan adopted with regard to outfalls and machinery, as well as the population to be provided for, and could not, therefore, be the same year after year, unless the city should cease to grow.

Canals between the lake and the river, on various lines and of different dimensions and forms, almost countless in number, might be proposed. The result of investigation with regard to what the city has the power at present to do, leads to the recommendation of a covered canal or conduit, circular in form and 12 feet in diameter, on the line of Fullerton avenue, with the requisite machinery for pumping or driving water in either direction, near the North Branch. Such a canal would be two miles long and, with a bottom 24 feet below low water and a head of 4½ feet, could be made to discharge 24,000 cubic feet per minute, or sufficient to change all the water in the North Branch and main river every thirty-six hours.

The estimated cost of the canal is $480,000, including machinery. The machinery recommended is a 300 horse-power engine and a propeller wheel so placed as to draw or drive the water in the direct line of the canal.

To avoid a large portion of the estimated cost of a covered canal, it has been proposed to make an open one. The damage to real estate alone, by such a work, would probably be greater than the entire estimated cost of the covered canal.

A navigable canal has also been proposed, sufficient to pass the largest vessels navigating the lakes, thus creating four miles of additional dock front, and rendering it much less expensive to force the necessary quantity of water either into or out of the river, because six inches difference of level in the navigable canal, would produce more effect than sixty would in the proposed covered one. But both the authority and propriety of the city's undertaking such a work are very doubtful.

This is perhaps the most proper place to mention that some of our ablest citizens have started the project of a ship canal between the North Branch and the lake, two and a half miles north of the city limits, where the ground is very favorable for such a purpose, and the land much cheaper. Should this work ever be carried out, and the North Branch be made navigable to it, the owners of such a canal could easily supply the current desired, and a much greater one than it would be practicable to supply through the covered canal.

To avoid the expense of steam machinery for producing the requisite current in the covered canal, it has been proposed to construct a long basin, with sloping sides, on the lake shore, and let the winds and waves drive water enough into it to supply the canal. Besides the various doubts with regard to the working of such an arrangement, the necessity of always relying upon a current from the lake into the river would be very objectionable.

It is expected that by next spring the South Branch will be drained into the Illinois river, through the deepened canal, but it was never supposed that this would purify the North Branch. If the North Branch must discharge its filth, in all stages of the stream, and at all seasons of the year, into the main river, then the water to flow from the main river into the South Branch, instead of being drawn from the lake, would be the foul discharge of the North Branch. It is easy to see that in that case there would be great disappointment with regard to the expected benefit of deepening the canal. It would therefore be necessary, in constructing a canal between the North Branch and the lake, for the purpose of purifying the former, to provide for discharging into the lake, whenever there might be very little or no natural current in the river.

A reservoir high up the stream, sufficient to supply for one month the quantity it is proposed to drive through the covered canal, would, it is estimated, cover about 2,500 acres. When it is considered that not merely one month's supply, but four, and possibly six or even more, might be needed, it seems useless to discuss such a plan. But if the great cost of this plan did not stand in the way, the impossibility of producing any current, except towards the mouth of the river, would be a great objection. Besides, the necessary exposure of such large surfaces as a reservoir would cover, by the drawing down of the water, in warm weather, could not be tolerated.

Supposing it practicable to get water enough from artesian wells to produce the requisite current, leaving out of view the objection that it would be impossible to turn that current from its natural course into the main river, the number of such wells, judging from the most successful one yet bored in this city—that of the Union Stock Yard Co.—would have to be 405, that is, if 24,000 cubic feet per minute should be required. All experience thus far, in other cities and countries, where many artesian wells have been bored, goes to show that their enlargement, either in size or number, does not produce a corresponding increase in the quantity of water furnished. There is no good reason why a different result should be expected here, but strong proof to the contrary.

In view of present knowledge and experience, it does not seem advisable to commence the construction of a system of intercepting sewers just yet, though the probability of having to do so ultimately seems rather to increase from year to year. More time seems to be needed to determine upon all the conditions that should be required of such a system.

If nothing more can be done to prevent nuisances in the North Branch, and the measures of the Board of Health seem to discourage hope in this direction, then the most advisable course the city has power at present to adopt appears to be to construct the proposed covered canal on Fullerton avenue, and for the following reasons:

1st. It could be made to discharge either into the lake or the river, as circumstances might require. During wet seasons, in

the spring and fall, nothing is needed be
cleanse the river. An artificial current f
would be needed when that of the river
an opposite direction when the natural di
Branch was too great to be overcome b
could discharge into the lake, and yet not
the river.

2nd. It could be made the outlet of
sewers for the northern portion of the ci
to be extended by future legislation, sev

3rd. It would afford a very convenie
for the sewers of a large part of the distr
to the city north of the present limits, be
river. It is doubtful if, in view of the p
the city, a better location could be sele
northern system of intercepting sewers.

An apparently serious objection has
It is that the outfall of sewage on the
Fullerton avenue, would create a nuisa
Drive.

There can be no doubt that the water
be sometimes discolored when it might
lake water enough introduced into the
it inoffensive to the smell, and then disc
posed canal into the lake, would be equa

Let what may be done, such a city as
its filth without producing something un
somewhere, and no more convenient or e
the whole of it can be suggested at pres
objectionable condition of the North Br

HARBOR.

The necessary works for the preservation of the entrance to the harbor have been performed by the National Government entirely, even to the maintaining of a light at the end of the north pier extension.

The past year will be of special note in the history of this city, in consequence of the construction of what may be considered the beginning of a system of outside docks or harbors, by the Chicago Canal and Dock Co., on the north side of the north pier extension. Plans have also been formed by the Government for the extension of the south pier, and the commencement of a harbor of refuge south of this pier. These, together with the extensive works the Illinois Central Railroad Co. are carrying out, will soon make a great change in the map of that part of the city.

WASHINGTON STREET RIVER TUNNEL.

This work continues to prove its importance to the city, by the increasing use made of it. There are times already when a line 1,000 feet long of vehicles, as near to each other as they could be safely, may be seen passing through it.

The leakage at the west end has been very much diminished, and with the exception of the appearance of damp walls, has ceased to be annoying.



LaSALLE STREET RIVI

The City Council, having decided th
main river should be on LaSalle street,
were prepared, proposals advertised f
Board, and the work let to Mr. R. E.
Moss and his associates, Messrs. Georg
McBean, commenced the construction
on the 3rd of November, 1869, and ha
completed the masonry of the tunnel
river to 50 feet north of the north dock

The preparation of the plans and the
the work have been committed to Mr.
satisfactorily performed the same duties
river tunnel.

In its main features, this tunnel is li
street, but in some respects it is believed
improvement on that work. The steep
ing 1 in 16, will be 1 in 20, which
approaches longer. The south one
north of Randolph street, and the north
gan street. The freer use of asphaltu
of brick in it, over the arches in the ri
proof that this tunnel will be much
although leakage has not been entirely
will have two feet more of head room,
add much to its comfort.

There is good reason to believe that t
work will be satisfactorily completed by
contract, July 1, 1871, when a descrip
the difficulties encountered in its constru

Respectfully submitted.

E. S. (

FINANCIAL STATEMENT.

TRIAL BALANCE LEDGER, BOARD OF PUBLIC WORKS, MARCH 31, 1870.

WATER DEPARTMENT.

	Dr.	*Cr.*
Water Works	$3,676,698 65	
Water Works Income		$3,142,404 49
Water Fund in hands of City Treasurer	48,667 46	
Water Loan Bonds, 6 per cent		1,030,000 00
Water Loan Bonds, 7 per cent		2,290,000 00
Water Loan Interest	1,368,029 96	
Water Expense and Repairs	1,139,803 71	
Discount on Water Loan Bonds, 6 per cent	38,358 88	
Duncan, Sherman & Co. (Coupon account)	9,261 00	
Water Works Coal account	1,304 84	
Water Works Stock account	32,142 70	
Water Works New Engine	706 04	
Water Pipe account	101,707 23	
Water Works Service-cocks	5,702 99	
Water Pumping Works account	7,903 55	
R. D. Wood & Co.		14,256 75
Wm. Smith	146 46	
Warren Foundry and Machine Company		12,107 95
Van Buren Street Water Service pipe	1,757 04	
Clark Street " "	1,019 86	
Halsted Street " "	1,042 53	
Blue Island Avenue " "	780 11	
Adams Street " "	650 03	
Washington Street " "	1,979 88	
Amounts carried forward	$6,437,662 92	$6,488,769 19

Amount brought forward			
West Adams Street	Water	Service-pipe	
Prairie Avenue	"	"	
Harmon Court	"	"	
Twelfth Street	"	"	
Sangamon Street	"	"	
Clinton Street	"	"	
Canal Street	"	"	
Jefferson Street	"	"	
Dearborn Street	"	"	
Huron Street	"	"	
N. Wells Street	"	"	
Lake Street	"	"	
Monroe Street	"	"	
Pine Street	"	"	
Ohio Street	"	"	
Division Street	"	"	
DesPlaines Street	"	"	
Madison Street	"	"	
Eighteenth Street	"	"	
Kinzie Street	"	"	
Polk Street	"	"	
Wabash avenue	"	"	
Fourteenth Street	"	"	
Indiana Avenue	"	"	
Calumet Avenue	"	"	
Randolph Street	"	"	
Harrison Street	"	"	
Park Avenue	"	"	
Archer Avenue	"	"	
Jackson Street	"	"	
Chicago Avenue	"	"	
North Avenue	"	"	
Clybourn Avenue	"	"	
LaSalle Street	"	"	

WATER FUND.

STATEMENT of the cash receipts by the Board of Public Works, from April 1, 1869, to March 31, 1870, inclusive, and detailed statement of the cost of various operations conducted by the Board during the same time:

RECEIPTS.

Proceeds of 600 Bonds, including interest	$573,163 73	
Water Tax collected	477,170 74	
Received for Tapping Pipes	15,008 78	
Received for Letting on Water	1,131 55	
Received for Setting Meters	2,961 71	
Received for sale of Hydrants, Pipe and Labor	6,769 56	
Received from Special Assessments	8,927 20	
Received for Work at Shop and Labor	832 99	
Received from Plumbers' Licenses	69 00	
Sand sold	190 00	
Old Iron	100 00	
Coal sold	504 86	
Stop cocks sold	52 50	
Lumber sold	9 15	
Dredging Machine	187 50	
Total cash receipts		$1,087,079 27
Balance due City Treasurer, April 1, 1869		12,390 49
		$1,074,688 78

EXPENDITURES.

ADDITION TO WATER WORKS.

DISTRIBUTING PIPES AND SUPPLY MAINS LAID.

	Cash Payment.	Tru
Cast iron pipe, 4, 6, 8, 12, 16 and 24 in...	$302,064 83	
Trenching and backfilling	27,741 91	
Coal used	610 53	
Labor	39,147 54	
Lead	24,133 67	
Constructing Chicago Avenue and Division Street Tunnels	24,414 20	
Castings	10,838 80	
Cement	1,911 06	
Brick	5 787 55	
Distributing pipe	7,672 21	
Horse shoeing	34 90	
Macadam	247 70	
Assistant Engineer	780 00	
Advertising	340 58	
Pipes	478 82	
Plumbing	379 89	
Harness and repairs	102 25	
Rubber Clothing	42 25	
Tape line	4 00	
Hardware	230 22	
Pat. fee on Hydrants	25 00	
Packing	103 55	
Steel	104 90	
Pails	22 50	
Salt	15 30	
Smoke pipes	52 14	
Repairing wagon	95 35	
Candles	8 25	
One bay horse	175 00	
Use of docks	107 29	
Sand	210 00	
Coal	56 00	
Lanterns	78 38	
Gasket	517 64	
Horse feed	281 32	
Nails, etc	12 25	
Stationery	11 85	
Amount carried forward	$448,334 63	

		Cash Payment.	*True Cost.*
Amount brought forward	$448,334 63		
Lead kettles	143 70		
Oil	3 85		
Lumber	497 57		
		$448,979 25	
ADD—			
Pipe used previously paid for	$33 863 96		
Discount on Water Loan Bonds	26,836 27		
New hydrants, stop-cocks, and labor at shops	15,046 30		
	$75,746 53		
DEDUCT—			
Labor and material for private parties.	10,073 24		
	$65,673 29		$514,652 54
NEW ENGINE HOUSE.			
J. Clark & Bro., paid in full	$2,847 94		
A. Wallbaum, " "	952 53		
F. Letz & Son, " "	174 13		
Floor and tiles	179 00		
Repairing roof	215 14		
Gas fitting	94 27		
Painting and glazing	1,828 35		
Paid Architect in full	1,134 76		
Heating apparatus	293 40		
Brass screws	7 15		
Brick	660 00		
Extras to A. Wallbaum	55 00		
		8,441 67	
ADD—			
Scrap iron sold and deducted from F. Letz' estimate	$1,240 05		
Labor at shop	590 65		
		1,830 70	10,272 37
NEW TOWER.			
Paid A. Wallbaum in full	$736 80		
Sign and paint	5 00		
F. Letz & Son (Est. No. 4)	1,077 50		
Paid Architect in full	976 27		
Two No. 3 valves	1,300 00		
		4,095 57	4,095 57
Amount carried forward		$461,516 49	$529,020 48

Amount brought forward

NEW INLET.

Paid Fox & Howard for dredging

ADD—

Labor moving sand..... $

DEDUCT—

Amount received for sand sold

NEW ENGINE.

Stationery and labor charged Pumping Work

Total addition to Water Works.....

WORKING EXPENSES AND REPAIRS.

EXPENSES AT PUMPING WORKS.

	Cash Payment.	True Cost.
Salary of engineer and assistants	$7,680 00	
Labor	20,634 08	
8,769 120/2000 tons of coal	59,151 80	
Iron and nails	1,020 77	
Oil, etc	1,174 25	
Castings	9,317 10	
Gas	952 13	
Traveling expenses to New York	178 76	
Saw and table	66 40	
One No. 1 drill	191 00	
Pipe	761 79	
Hardware	216 36	
Lumber	891 31	
Bolts and washers	444 28	
Keeping horses	1,090 46	
Packing	165 98	
Repairing boilers	418 11	
134 loads of dirt	67 00	
Fodder cutter	17 00	
Chain	10 50	
One horse	150 00	
Harness and repairs	55 90	
One vice	77 95	
Plumbing	43 07	
Waste	112 08	
Drain pipe	40 75	
Sole leather	72 78	
Brooms	14 86	
Chambers	96 42	
Repairing roof	74 02	
Pails	3 00	
Soap	32 05	
Sundry cash items	32 93	
Scale	63 25	
Draughtsman	101 50	
Amount carried forward	$105,419 64	

Amount brought forward		$105,41
Gas fitting		1
Repairing wagon		11
Engraving engine		47
Rope and oakum		4
Jute twine		
Handles		1
Grading lot		8
Coal, Bloss		7
Horse blankets		4
Brass tubes		11
Scavenger work		1
Photographing		1
Lead and packing		67
Paint		4
Stationery		8
Speaking tube		2
Tape line		1
Rubber clothing		2
Ice		1
Grind stone		
ADD—		
Castings rec'd and paid for with scrap iron	$2,800 80	
Coal used prev'ly paid for.	828 57	
	$3,629 37	$3,6
DEDUCT—		
Hydrants, stop-cocks and labor used for and cha'gd to extension repairs and other water accounts...	$27,289 98	
Labor at shop in 1868....	859 39	
Material paid for and now on hand	1,520 62	
		$29,6
		$26,0

LAKE TUNNEL.

Keeper of crib	$9
Oil	1
Supplies	
Coal	
Amounts carried forward	$1,1

		Cash Payments.	*True Cost.*
Amounts brought forward.....	$1,162 25	$107,225 68	$81,185 06
Use of tug.....	1,166 00		
Lamp glass, etc.....	5 50		
Draughtsman.....	60 00		
Hardware.....	78 21		
Boat.....	50 00		
Examining shaft.....	207 50		
		$2,729 46	
ADD—			
Labor at shop in 1869.....	$23 75		$2,753 21
OFFICE EXPENSE AND SALARIES.			
Salaries of Commissioners.....	3,999 96		
Salaries of Secretary and assistant.....	1,433 32		
Salary of City Engineer.....	1,500 00		
Salary of book-keepers and clerks.....	3,548 92		
Salary of Superintendent.....	1,000 00		
Salary of Assistant Engineer.....	773 33		
Salary of Draughtsman.....	2,716 63		
Salary of Janitor and Watchman.....	615 67		
Salary of Water Assessor and assistant.	3,506 58		
Salary of Collectors.....	4,900 00		
Office clerks.....	2,862 87		
Printing.....	1,170 84		
Stationery.....	1,632 68		
Revenue stamps.....	221 12		
Furniture and repairs	161 58		
Oil.....	8 32		
Car fares.....	50 00		
Hardware.....	138 31		
Plumbing.....	85 72		
Advertising.....	934 44		
Engraving.....	845 00		
Pipe fitting.....	131 36		
Office rent.....	2,300 00		
Subscription to papers.....	40 63		
Express on bonds.....	271 50		
Telegrams	10 95		
Horse feed.....	113 13		
Engraving bonds	137 50		
Gas.....	196 38		
Washing towels.....	20 00		
Amounts carried forward.....	$35,326 74	$109,955 14	$83,938 27

Amounts brought forward.....		$35,8
Lumber.....		
Ice.....		
Labor.....		1,8
Miscellaneous cash items.....		
Calcimining office.....		
Rent of stable lot.....		
Sprinkling.....		
Warrant 369 overpaid.....		
Inspectors.....		8
Interest on loan.....		
Cost of water warrant.....		
Coal.....		1
New awnings.....		
Coal.....		8
ADD—		
Labor at shop in 1868.....	$91 00	$
DEDUCT—		
Am't rec'd from water service pipe assets.....	1,204 18	
Amo'nt rec'd from plumbers license.....	53 00	
Voucher canceled.....	99 88	
	$1,357 06	1,2

REPAIRS OF PIPE, HYDRANTS, STOP-COCKS A MISCELLANEOUS OPERATING EXPENSES.

Labor.....	$28,1
Hydrant inspectors.....	5,2
Repairing Chicago avenue main.....	9,0
Pipe used.....	1,0
Assessments on reservoir lots.....	1,2
Repairing wagon.....	
Cement.....	1
Brick.....	
Repairing leaks.....	2
Rope, etc.....	
Lead.....	8
Repairing State street main.....	6
Plumbing.....	3
Sundry cash items.....	
Amounts carried forward.....	$47,0

			Cash Payment.	True Cost.
Amount brought forward...		$47,092 44	$148,363 82	$121,080 89
Iron works		63 45		
Express on diving apparatus		4 00		
Dredging at State street		83 95		
Dredging at Adams street		616 12		
Lumber		141 20		
Horse shoeing		41 20		
Castings		306 49		
Repairing lamps		16 75		
Rent of block 77, school section		900 00		
Shutting off water		60 00		
Sewerage works		10 00		
Car fares		75 00		
Hardware		58 89		
Salt		3 00		
Damage by water		51 50		
Oakum		18 62		
Painting		1 75		
Damage to Buggy		10 00		
Stationery		146 00		
Advertising		197 75		
Printing		230 40		
Coal used		1,592 27		
			51,720 78	
ADD—				
Hydrants and Stop cocks used	$6,828 41			
Repairing permanent tools	1,670 57			
Watching reservoir, grading lot, etc	620 64			
Depreciation in meters	6,183 00			
		$15,302 62		
DEDUCT—				
Received for shutting off and letting on water	$963 32			
Received from water service pipe assessments	905 53			
Received from old iron sold	100 00			
		1,968 85		
		$13,333 77		65,054 55
WATER METERS.				
78 new meters		$5,069 27		
Machinist		1,245 14		
Labor		1,888 38		
Amounts carried forward		$8,202 79	$200,084 60	$186,135 44

		Cash Payment.	*Tr*
Amounts brought forward.....	$8,202 79	$200,084 60	$186,
Castings.....	1,226 10		
Printing.....	46 00		
Oil.....	4 00		
Hardware.....	24 78		
Meter counters.....	36 50		
Plumbing.....	43 42		
Iron and nails.....	83 50		
Lumber.....	268 48		
Pipe Fitter.....	833 30		
Stationery.....	40 64		
Freight on meters.....	234 19		
Rubber clothing.....	13 25		
		11,056 95	
ADD—			
Labor at shop.....	$10 48		
DEDUCT—			
New meters charged stock. $4,510 00			
Amount received for setting meters..... 2,961 71	7,471 71		
	$7,461 23		3,
Total operating expenses.....		$211,141 55	$189,

MISCELLANEOUS.

		Cash Payment.	*True Cost.*
SERVICE COCKS.			
Taps and cast iron boxes purchased	$11,497 00		
Services of tappers and labor	5,011 25		
Permit clerks	1,403 33		
Advertising	106 89		
Four permits not issued	16 40		
Horse feed	163 32		
One wagon	145 00		
Repairing wagon	67 30		
Horse shoeing	73 00		
Harness	23 10		
Hardware	12 45		
Stationery	51 65		
Oil, etc	5 01		
One Horse	125 00		
Use of horse	35 00		
Plumbing	17 99		
Sewer pipe	63 60		
Coal used	14 88		
		$18,832 17	
ADD—			
Addition to stable for tappers $208 61			
Tappers' tools, includ'g wagon 1,393 50			
	$1,602 11		
DEDUCT—			
Cash receipts for tapping $15,008 78			
Service cocks sold 62 25			
	15,071 03		
	$13,468 92		$5,363 25
COAL ACCOUNT.			
Coal purchased and not used		504 86	504 86
WATER PIPE.			
Pipe purchased and not used		79,077 11	79,077 11
INCOME.			
Tax overpaid refunded		202 50	202 50
Amount carried forward		$98,616 64	$85,147 72

WATER SERVICE PIPE.

Amount brought forward	
Van Buren street.....	$1,7
N. Clark street.....	1,0
Halsted street.....	1,0
West Adams street.....	6
Washington street.....	1,8
Adams street.....	1,2
Prairie avenue.....	1,1
Twelfth street.....	1,7
Sangamon street.....	1,4
Clinton street.....	2,7
Canal street.....	3,2
Jefferson street.....	8
Dearborn street.....	3,8
Huron street.....	8
North Wells street.....	1,8
Lake street.....	5,4
Monroe street.....	4
Pine street.....	4
Ohio street.....	8
Division street.....	4
Desplaines street.....	1,6
Madison street.....	8,8
Eighteenth street.....	7
Kinzie street.....	1
Polk street.....	8
Wabash avenue.....	1
Fourteenth street.....	
Indiana avenue.....	1
Calumet avenue.....	6
Randolph street.....	1,5
Harrison street.....	1,0
Park avenue.....	1,4
Archer avenue.....	1,0
Jackson street.....	1,5
Chicago avenue.....	1
North avenue.....	8
Clybourn avenue.....	8
La Salle street.....	1,0
Deduct amount received from assessments	$6,1
Total miscellaneous expense	

WATER LOAN INTEREST.

Interest on Water Loan Bonds July 1st, 1869	$81,287 71		
Interest on Water Loan Bonds January 1st, 1870	88,621 00		
Coupons paid by City Treasurer	26,225 00		
		$196,133 71	
ADD—			
Amount transferred from Discount Account	$4,279 22		
			$200,412 93

RECAPITULATION—WATER FUND.

Total Addition to Water Works brought forward.	$462,901 49	$531,021 55
Total Operating Expenses brought forward	211,141 55	189,731 16
Total Miscellaneous Expenses brought forward	155,844 57	135,473 91
Total Water Loan Interest	196,133 71	200,412 93
Totals	$1,026,021 32	$1,056,639 55

Total Cash Expenditures	$1,026,021 32	
Balance in Treasurer's hands April 1st, 1870	48,667 46	
	$1,074,688 78	
Total Receipts for year	$1,087,079 27	
Due City Treasurer April 1st, 1869	12,390 49	
	$1,074,688 78	

SEWERAGE DEPARTMENT.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC W
MARCH 31, 1870.

	Dr.		
Sewerage Fund due City Treasurer			$5
Sewers, North Division	$580,407	28	
" South Division	812,548	21	
" West Division	1,220,867	80	
S. Lynd, Treasurer of Sewerage Commissioners.	109,245	48	
Sewerage Loan Bonds, 6 per cent			8
" " " 7 per cent			2,5
" " " cancelled			2(
" Sinking Fund			
" " " Mortgages	6,245	28	
Discount on Sewerage Loan Bonds	19,266	71	
Sewerage Loan Interest	56,477	54	
" Brick	25,669	18	
" Pipe	11,456	35	
" Stock	2,694	45	
American Exchange National Bank coupon ac't.	4,895	00	
Sewerage Sinking Fund in hands of City Treas'r.	70,369	73	
" Manhole and Catch Basin Covers	4,146	60	
" Expense and Repairs	16,036	19	
South Park Avenue Sewer	334	00	
House drains			
T. W. Phinney			
S. S. Hayes			
William Giles			
Chas. Messenger			
C. T. Bowen			
Dennis Coughlin	1,561	51	
Z. Cobb	31	53	
Chicago, Burlington and Quincy R. R. Co			
Owners lots 1, 2, 7 and 8, block 5, J. R. & S. add.	94	54	
Amounts carried forward	$2,942,347	38	$2,98

	Dr.	*Cr.*
Amounts brought forward	$2,942,347 38	$2,981,682 52
Healy Slough improvement	72 14	
N. Clark Street drains	73 87	
S. ½ lot 5, block 123, School Section	22 18	
N. State Street drains	582 82	
W. Adams Street "	2,070 80	
W. Madison " "	7,815 73	
S. Wells " "	405 96	
Washington " "	96 25	
LaSalle " "	3,630 31	
Michigan Avenue "	648 42	
Halsted Street "	2,224 17	
Clark " "	745 84	
Indiana Avenue "	198 38	
Kinzie Street "	69	
Archer Avenue "	157 28	
Franklin Street "	232 40	
Prairie Avenue "	1,177 00	
DesPlaines Street "		325 00
Canal " "	3,475 68	
Clinton " "	1,626 94	
N. Dearborn " "	2,504 69	
Twelfth " "	330 75	
W. Lake " "	3,857 60	
Filling N. Market Street	1,205 70	
Filling Harrison and Polk Streets	529 71	
Polk Street drains	127 68	
Jefferson Street drains	639 93	
N. Wells " "	448 10	
Randolph " "	641 59	
Eighteenth " "	391 86	
W. Washington Street drains	1,537 51	
Wabash Avenue "	1,379 58	
Division Street "	298 20	
Fourteenth Street "	75 00	
Calumet Avenue "	736 65	
Harrison Street "	969 00	
Jackson " "	396 00	
South Park Avenue "	2,197 75	
North Avenue "	1,661 75	
Kelly, Langan & McGrath, Contractors		1,958 00
Brown & Flannery, "		1,389 97
Woodruff & Raffin, "		1,695 25
Galena and Chicago U. R. R. Co.		382 55
	$2,987,533 29	$2,987,533 29

SEWERAGE FUND.

STATEMENT of the cash receipts by the Board of Public Work from April 1, 1869, to March 31, 1870, inclusive, and detaile statement of the cost of the various operations conducted by th Board during the same time:

RECEIPTS.

Proceeds of 825 seven per cent. Bonds	$785,853 20	
Received from City, account of Sewerage Tax, 1868,	21,308 62	
" " " " " " 1869,	280,387 61	
" " Temporary Loan	27,000 00	
House Drain Permits issued	12,639 27	
Received from Private Drains	23,438 01	
Brick sold	8,921 55	
Pipe sold	1,048 40	
Covers sold	405 10	
Private Drain Assessments	2,947 55	
Received for const. South Park Avenue sewer	1,134 24	
" " labor and material	497 02	
" " contract forfeit	400 00	
Sheeting sold	708 25	
Vouchers cancelled	763 15	
Drain-layers' license	28 00	
		$1,167,479
Balance due Treasurer, April 1, 1870		55,835
		$1,223,315

EXPENDITURES.

SEWERS, NORTH DIVISION.			*Cash Payments.*	*True Cost.*
Salary of Engineers		$ 2,626 20		
Inspecting and labor		12,050 26		
Constructing sewer		2 328 81		
Cement		1,255 81		
Hardware		54 66		
Stationery		21 00		
Lumber		109 45		
Sand used		180 00		
Inspector		419 11		
Plumbing		104 61		
Repairing wagon		3 92		
Advertising		16 80		
Soap		1 20		
Oil, etc		8 48		
Nails, etc		6 83		
Pipe		7 50		
Lanterns		13 00		
Horse feed		31 27		
Rope and oakum		4 17		
Car fares		9 50		
Pails		12 00		
Rubber clothing		6 00		
Water used		48 67		
			$19,319 25	
ADD—				
Expense of sewer,	Oak street	$ 2,453 32		
" "	N. Clark street	37,035 07		
" "	North avenue	2,137 27		
" "	Larrabee street	8,807 32		
" "	Whitney street	1,391 50		
" "	Wendell street	698 77		
" "	Sedgwick street	18,204 16		
" "	Elm street	642 52		
" "	Schiller street	2,553 81		
" "	Siegel street	2,560 23		
" "	Goethe street	2,304 94		
" "	Cass street	857 29		
" "	Franklin street	1,131 91		
" "	Bremer street	2,316 57		
" "	Grant street	229 94		
" "	Pearson street	844 82		
" "	Hill street	242 15		
" "	White street	600 87		
Amounts carried forward		$85,012 46	$19,319 25	

Amounts brought forward		$85,0
Expense of sewer, Hinsdale street		4
" " Granger street.....		2,4
N. Clark street sewer.....		3
Labor on Pay-roll charged South Div.		7
Proportion of int. on Temporary L an.		1
Proportion of discount on Bonds sold.		6,5
Cement used.....		
Depreciation in stock.....		2
Covers used		7
Brick used.....		3,3
Pipe used.....		2,8
		$102,8
DEDUCT—		
Amount rec'd for plumbing ..	$ 3 65	
Pipe charged house drains....	1,237 25	
		1,2
		$101,5

SEWERS, SOUTH DIVISION.

Inspectors and labor	$18,3
Engineer and Assistants.....	2,6
Cement	2,0
Constructing sewers	1,1
Sand used.....	2
Lumber.....	1
Chain, oakum, etc.....	
Plumbing	
Hardware.....	
Ft. on lumber.....	
Oil, etc.....	
Nails, etc.....	
Pipe.....	
Lanterns	
Cement.....	
Keeping horse.....	
Rubber clothing.....	
Repairing wagon.....	
Stationery	
Car fares.....	
Advertising	
Water used	

ADD—		
Expense of sewer, Thirteenth street..		$ 3
" " Douglass place....		98,2
Amounts carried forward..		$98,6

		Cash Payments.	*Tr*
Amounts brought forward	$98,620 92	$44,287 68	$1:
Expense of sewer, Kankakee avenue .	10,250 28		
" " Purple street	712 82		
" " Wentworth avenue	1,648 02		
" " Prairie avenue....	229 30		
" " Thirteenth street..	1,254 93		
" " Deering street	6,734 21		
" " Main street.....	7,208 61		
" " Stewart avenue...	27 30		
" " Archer avenue....	8,107 31		
" " Fourteenth street.	1,988 82		
" " Indiana avenue ...	6,255 81		
" " Calumet avenue ..	2,378 65		
" " Michigan avenue..	1,046 90		
" " Wabash avenue...	2,385 27		
" " State street.....	5,502 16		
" " Twenty-third st...	6,487 08		
" " Seventeenth street.	806 20		
" " Twenty-ninth st...	1,610 88		
" " Twenty-fifth street.	987 24		
" " Twentieth street ..	3,318 96		
" " Twenty-fourth st. .	1,518 39		
" " Finnel street	21 00		
" " Buddan street.....	680 47		
" " Northern street...	525 05		
" " Quarry street.....	150 50		
" " Twenty-first street.	3,417 34		
" " Wells street	122 50		
" " Hanover street ...	1,961 87		
" " Sanger street	15 00		
Proportion of int. on Temporary Loan,	295 84		
Proportion of discount on Bonds	13,048 94		
Cement used	52 62		
Depreciation in stock	433 84		
Covers used	490 00		
Brick used	2,817 43		
Pipe used	3,881 12		
	$196,993 58		
DEDUCT—			
Amount received for labor and material..... $2,098 64			
Pipe charged house drains. 1,596 60			
	3,695 24		
	$193,298 34		21
Amounts carried forward.....		$44,287 68	$33

		Cash Payments.	*True*
Amounts brought forward		$44,287 68	$339,16
SEWERS, WEST DIVISION.			
Inspecting and labor	$32,272 90		
Engineer and assistant.....	2,821 65		
Cement....	3,192 85		
Constructing sewers	4,104 62		
Freight on cement.....	33 54		
Lumber	109 35		
Car fares	58 50		
Water used	48 67		
Sand used.....	300 00		
Hardware	16 67		
Rope, oakum, etc.....	21 50		
Rubber clothing.....	6 00		
Repairing wagon.....	37 16		
Oil can, etc.....	20 69		
Nails, etc.....	3 00		
Tools, shovels, etc	36 00		
Teaming.....	10 00		
Stationery	23 01		
Plumbing	69 07		
Pipe.....	7 50		
Oak Pails.....	12 00		
Stone.....	50 40		
Lanterns.....	13 00		
Horse keeping	49 50		
Advertising.....	16 78		
Short salary of Assistant Engineer.....	10 00		
		$43,344 36	
ADD—			
Constructing sewers for which money was advanced	383 25		
Expense of sewer—Robey street	755 77		
" " Oakley street	765 42		
" " Centre avenue.....	16,388 56		
" " Adams street... ...	8,858 69		
" " Ada street	1,450 40		
" " Wright street.....	11,053 12		
" " Morgan street.....	3,051 04		
" " Halsted street.....	4,095 09		
" " Madison street	13,345 93		
" " Washington street..	20 00		
" " Adams street	15 00		
" " Sixteenth street	37 50		
" " Mitchell street	10,579 31		
Amounts carried forward.....	$70,799 08	$87,632 04	$339,16

		Cash Payments.	*True Cost.*
Amounts brought forward.....	$70,799 08	$87,632 04	$339,169 61
Expense of sewer—Kinzie street.....	9,698 46		
" " Sheldon street	509 10		
" " Jefferson street.....	3,575 24		
" " Union street	3,319 89		
" " Lake street	27,188 68		
" " Lincoln street	2,012 64		
" " Loomis street	3,820 77		
" " Fulton street.....	26,426 71		
" " Peoria street.....	1,422 20		
" " Sangamon street ...	6,617 38		
" " Throop street.	2,446 14		
" " Harrison street	17,095 85		
" " Hoyne street.	754 72		
" " Aberdeen street....	4 75		
" " Desplaines street...	6,827 35		
" " Union street	13 50		
" " Division street	9,366 82		
" " Mill avenue	4,786 87		
" " Kramer street.....	1,713 40		
" " Park avenue	2,818 72		
" " Warren avenue	3,903 05		
" " Liberty street.....	1,594 03		
" " Forquer street.....	1,812 39		
" " Canalport avenue ..	4,541 71		
" " Monroe street.....	40 00		
" " Eighteenth street ..	1,156 74		
" " Canal street	1,942 60		
" " Leavitt street.....	815 38		
" " Wood Green street .	794 67		
" " Hubbard street. ..	2,943 98		
" " Van Buren street...	7,836 11		
" " Reuben street. ...	5,594 26		
" " Bickerdyke street ..	1,199 40		
" " Sebor street.	672 83		
" " Mather street.....	930 18		
" " Dupuyste street...	608 60		
" " Green street	2,929 57		
Proportion of interest on temporary loan	443 74		
Proportion of discount on bonds	19,573 41		
Cemen used.....	78 93		
Depreciation in stock.....	650 76		
Covers used	1,364 65		
Brick used.....	6,997 63		
Pipe used.....	7,580 93		
Amounts carried forward.....	$275,223 82	$87,632 04	$339,169 61

		Cash Payments.	*True Co*
Amounts brought forward	$275,223 82	$87,632 04	$339,169
DEDUCT—			
Amount received for puddling sewers, and pipe charged house drains	3,596 53		
	$271,727 29		314,971
REPAIRS SEWERS, NORTH DIVISION.			
Labor	$1,446 59		
Cement	104 43		
Plumbing	1 31		
Sand used	6 00		
		1,558 33	
ADD—			
Depreciation in stock	$132 81		
Covers used	460 00		
Brick used	39 90		
	$2,191 04		2,191
REPAIRS SEWERS, SOUTH DIVISION.			
Labor	$1,544 94		
Cement	92 78		
Plumbing	1 31		
		1,639 03	
ADD—			
Depreciation in stock	$150 52		
Covers used	$644 00		
Brick used	44 10		
Pipe used	3 30		
	691 40		
	$841 92		2,480
REPAIRS SEWERS, WEST DIVISION.			
Labor	$1,531 75		
Cement	63 23		
Car fares	31 25		
Sand used	12 00		
Plumbing	1 31		
		1,639 54	
ADD—			
Depreciation in stock	$150 51		
Covers used	1,016 60		
Brick used	25 72		
Pipe used	22 80		
	$1,215 63		2,855
Amounts carried forward		$92,468 94	$661,668

		Cash Payments.	*True Cost.*
Amounts brought forward.....		$92,468 94	$661,668 42
CLEANING SEWERS, NORTH DIVISION.			
Labor.....	$5,949 62		
Water used.....	396 64		
Oil, etc.....	13 42		
Boots.....	5 34		
Pipe couplings.....	23 00		
Hardware.....	13 17		
Acid.....	6 02		
Canvas spout.....	2 33		
		6,409 54	
ADD—			
Depreciation in stock.....	$216 92		
DEDUCT—			
Amount received for cleaning.....	302 12		
	$85 20		6,324 34
CLEANING SEWERS, SOUTH DIVISION.			
Labor.....	$8,893 98		
Water used.....	396 64		
Repairing wagon.....	7 45		
Candles.....	10 79		
Oakum, etc.....	2 17		
Oil.....	2 63		
Boots.....	5 33		
Pipe coupling.....	23 00		
Canvas spout.....	2 33		
Hardware.....	11 92		
Acid.....	6 03		
		9,362 27	
ADD—			
Depreciation in stock.....	$ 325 38		
DEDUCT—			
Amount received for cleaning.....	72 25		
	$253 13		9,615 40
CLEANING SEWERS WEST DIVISION.			
Labor.....	$9,291 76		
Repairing wagon.....	7 46		
Oakum.....	2 16		
Oil, etc.....	14 61		
Boots.....	5 33		
Pipe couplings.....	23 00		
Canvas spout.....	2 34		
Hardware.....	15 41		
Amounts carried forward.....	$9,362 07	$108,240 75	$677,608 16

		Cash Payments.	*True C*
Amounts brought forward.....	$9,362 07	$108,240 75	$677,6
Water used.....	396 64		
Acid.....	2 75		
Salt.....	4 60		
		9,766 06	
ADD—			
Depreciation in stock.....	$325 38		
DEDUCT—			
Amount received for cleaning.....	15 50		
	309 88		10,0
SEWERAGE STOCK.			
Tools.....	$368 62		
Sheeting.....	938 87		
870 feet of hose.....	652 50		
Repairing tools.....	432 85		
Freight on sheeting.....	48 00		
Wheel barrows.....	15 00		
		2,455 84	
SEWERAGE MAN HOLES AND CATCH-BASIN COVERS.			
Labor.....	$3,781 50		
Nails.....	1,017 20		
Lumber.....	5,281 07		
Freight on lumber.....	1,168 00		
Tar.....	175 18		
Cement.....	35 00		
		11,457 95	
DEDUCT—			
Covers used for sewers and repairs..	$10,841 25		
Covers sold.....	405 10		
	$11,246 35		2
SEWERAGE LOAN INTEREST.			
Remittance to Am. Exc. Natl. Bank to pay July interest.....	$69,425 63		
Remittance to Am. Exc. Natl. Bank to pay January interest.....	82,806 50		
Remittance to Am. Exc. Natl. Bank to pay short remittance.....	1,012 50		
Paid river improv't fund for its proportion of tax for 1866, 1867 and 1868.	96,457 32		
Interest paid in Chicago.....	390 00		
		250,091 95	250,0
Amounts carried forward.....		$382,012 55	$937,9

		Cash Payments.	*True Cost.*
Amounts brought forward.....		$382,012 55	$937,987 65
CERTIFICATES OF INDEBTEDNESS.			
Temporary loans.....		27,887 49	
DEDUCT—			
Am't rec'd from temporary loans...	$27,887 49		
SEWERAGE BRICK.			
Brick purchased.....	$156,889 90		
Labor.....	512 61		
Advertising.....	102 45		
		157,504 96	
DEDUCT—			
Brick charged sundry sewers.....	$140,413 53		17,091 43
SEWERAGE PIPE.			
Pipe purchased.....	$37,149 15		
Labor.....	1,275 02		
		38,424 17	
DEDUCT—			
Pipe charged sundry sewers.....	$36,226 48		2,197 69
OFFICE EXPENSES AND SALARIES.			
Salaries of Commissioners.....	$3,999 96		
Salary of Secretary and assistant. ...	1,666 65		
Salary of City Engineer.....	1,500 00		
Salary of Book keeper and clerks....	3,983 26		
Salary of Superintendent...	1,000 00		
Salary of Watchman.....	181 00		
Stationery.....	532 52		
Furniture....	182 30		
Advertising.....	343 34		
Revenue stamps.....	215 10		
Rent of office.....	2,250 00		
Eng. clerk.....	550 00		
Lumber.....	15 83		
Papers.....	40 63		
Gas fitting.....	38 72		
Painting	12 34		
Labor on coupons.....	124 67		
Car fare.....	58 17		
Gas.....	122 70		
Rent of room 15.....	50 00		
Rent of stable lot	31 26		
Amounts carried forward.....	$16,898 45	$605,829 17	$957,276 77

		Cash Payments.	*True Cost*
Amounts brought forward.....	$16,898 45	$605,829 17	$957,276
Bond Book clerk.....	50 55		
Commission on Temporary Loan.....	129 67		
Draughtsman.....	879 87		
Office clerk.....	255 50		
Sprinkling.....	15 00		
Oil, etc.....	7 97		
Printing.....	832 61		
Labor.....	1,241 18		
Horse-keeping.....	197 04		
Express on Bonds.....	460 40		
Coal.....	353 00		
Engraving Bonds.....	209 83		
Miscellaneous cash items.....	103 53		
Hardware.....	123 93		
Washing towels.....	20 00		
Ice.....	28 18		
Interest on advance.....	95 66		
		21,902 37	
DEDUCT—			
Am't rec'd from Contract forfeit, $400 00			
" " " Drain license.. 28 00			
" " " Assessments...3,010 30			
	3,438 30		18,464
ROBEY STREET SEWER.			
Dickey & O'Brien, constructing sewer.....		512 55	
OAKLEY STREET SEWER.			
Dickey & O'Brien, constructing sewer.....		522 20	
DOUGLASS PLACE SEWER.			
Haines & Hallalin, constructing sewer...	$80,629 13		
Labor.....	2,988 04		
Plumbing.....	132 06		
Cement.....	38 12		
		83,787 35	
CENTRE AVENUE SEWER.			
M. McNichols, constructing sewer.....	$ 807 76		
John Duffy " "	836 91		
Kelly, Langan & McGraw, const'g sewer..	8,239 03		
Cement.....	24 43		
Labor.....	785 17		
		10,693 30	
Amount carried forward.....		$723,246 94	$975,740

		Cash Payments.	*True Cost.*
Amount brought forward.....		$723,246 94	$975,740 84
ADAMS STREET SEWER.			
M. McNichols, constructing sewer	$4,900 82		
Cement.....	11 25		
Labor.....	584 50		
		5,496 07	
KANKAKEE AVENUE SEWER.			
P. Doyle, constructing sewer	$1.607 40		
P. D. Betticher.....	5,154 58		
Cement.....	9 02		
Labor	1,291 24		
		8,062 24	
ADA STREET SEWER.			
Woodruff & Raffin, constructing sewer ...	$1,066 40		
Labor.....	61 50		
		1,127 90	
WRIGHT STREET SEWER.			
M. Mulany, constructing sewer	$6,277 63		
Cement.....	11 87		
Plumbing.....	215 51		
Labor.....	11 25		
		6,516 26	
MORGAN STREET SEWER.			
Haines & Hallalin, constructing sewer....	$ 723 75		
Finnucan & Hallalin, " "	1,443 75		
Labor.....	78 75		
		2,246 25	
HALSTED STREET SEWER.			
John Duffy, constructing sewer.....	$1,827 48		
Cement	113 05		
Plumbing	7 70		
Labor.....	76 00		
		2,024 23	
OAK STREET SEWER.			
Bartley Langan, constructing sewer	$959 10		
Cement.....	144 05		
330 loads dirt...	198 00		
Labor.....	116 00		
		1,417 15	
PURPLE STREET SEWER.			
M. Mulany, constructing sewer		407 25	
Amounts carried forward.....		$750,544 29	$975,740 84

		Cash Payments.	True Co
Amounts brought forward		$750,544 29	$975,74
WENTWORTH AVENUE SEWER.			
M. Mulany, constructing sewer	$371 85		
T. McQueeney, constructing sewer	502 15		
Labor	58 83		
Plumbing	7 55		
		940 38	
WEST MADISON STREET SEWER.			
Woodruff & Raffin, constructing sewer ..	$8,336 25		
" " extras	32 62		
Labor	186 38		
		8,555 25	
WEST WASHINGTON STREET SEWER.			
Labor		35 00	
SIXTEENTH STREET SEWER.			
Labor		37 50	
PRAIRIE AVENUE SEWER.			
Labor	$ 9 25		
Cement	22 50		
		31 75	
NORTH CLARK STREET SEWER.			
Labor	$308 47		
Cement	31 60		
		340 07	
MITCHELL STREET SEWER.			
M. Mulany, constructing sewer	$6,356 25		
" extras	97 50		
Labor	58 00		
		6,511 75	
KINZIE STREET SEWER.			
Finnucan & Hallalin, constructing sewer..	$6,375 00		
" " extras	40 50		
Labor	50 09		
		6,465 59	
THIRTEENTH STREET SEWER.			
Woodruff & Raffin, constructing sewer ...	$ 778 75		
" " extras	22 55		
Labor	16 00		
		817 30	
NORTH AVENUE SEWER.			
Labor	$1,703 50		
Cement	109 20		
		1,812 70	
Amounts carried forward		$776,091 58	$975,74

		Cash Payments.	*True Cost.*
Amounts brought forward.....		$776,091 58	$975,740 84
SHELDON STREET SEWER.			
Labor.....		509 10	
JEFFERSON STREET SEWER.			
M. Mullany, constructing sewer	$2,401 05		
" extras	3 38		
Plumbing.....	30 01		
		2,434 44	
DEERING STREET SEWER.			
T. McQueeney, constructing sewer	$3,772 27		
Labor.....	177 30		
Plumbing.....	39 52		
Cement.....	2 00		
		3,991 09	
MAIN STREET SEWER.			
T. McQueeney, constructing sewer	$4,113 12		
" extras..... ..	28 19		
Plumbing.....	10 50		
		4,151 81	
STEWART AVENUE SEWER.			
Plumbing.....		27 30	
UNION STREET SEWER.			
M. Mulany, constructing sewer.....	$2,087 25		
" extras.....	9 12		
Plumbing.....	22 05		
		2,118 42	
WEST LAKE STREET SEWER.			
Woodruff & Raffin, constructing sewer...	$18,758 95		
" " extras	267 47		
Labor.....	582 26		
		19,608 68	
ARCHER AVENUE SEWER.			
T. McQueeney, constructing sewer	$4,446 75		
" extras	24 98		
Labor	383 91		
		4,855 64	
LINCOLN AVENUE SEWER.			
John Duffy, constructing sewer.....	$26,972 40		
" extras	1,330 82		
Labor	206 50		
		28,509 72	
Amounts carried forward		$842,297 78	$975,740 84

Amounts brought forward.....

LINCOLN STREET SEWER.

Dickey & O'Brien, constructing sewer... $1,
" " extras.....
Labor.....
Plumbing.....

LOOMIS STREET SEWER.

M Mulany, constructing sewer $2,
" extras
Labor

LARRABEE STREET SEWER.

M. McNichols, constructing sewer..... $5,
" extras.....
Labor

FOURTEENTH STREET SEWER.

P. D. Betticher, constructing sewer $1,
Labor

FULTON STREET SEWER.

Kelley, Langan & McGraw, const. sewer. $17,
" " " extras.....
Labor

PEORIA STREET SEWER.

M. Mulany, constructing sewer..... $1,
Labor

INDIANA AVENUE SEWER.

P. Doyle $1,
P. D. Betticher.. 2,
Labor 2

CALUMET AVENUE SEWER.

P. Doyle, constructing sewer $1,
" extras.....
Labor

MICHIGAN AVENUE SEWER.

P. Doyle, constructing sewer..... $7
" extras.....
Labor

Amounts carried forward.....

		Cash Payments.	*True Cost.*
Amounts brought forward		$880,103 65	$975,740 84
WABASH AVENUE SEWER.			
P. Doyle, constructing sewer	$1,666 80		
" extras	75 25		
Labor	66 50		
		1,808 05	
WHITNEY STREET SEWER.			
J. McHugh, constructing sewer	$1,000 15		
" extras	109 65		
Labor	11 63		
		1,121 43	
WENDELL STREET SEWER.			
J. McHugh, constructing sewer	$98 45		
" extras	2 75		
Labor	3 50		
		104 70	
STATE STREET SEWER.			
P. Doyle, constructing sewer	$4,255 68		
" extras	144 48		
Labor	55 50		
		4,455 66	
SANGAMON STREET SEWER.			
Finnucan & Hallalin, constructing sewer.	$2,811 20		
" " extras	49 75		
M. Mulany, constructing sewer....	1,874 25		
" extras	21 50		
Labor	54 00		
		4,810 70	
SEDGWICK STREET SEWER.			
M. McNichols, constructing sewer.....	$7,688 55		
M. McNichols, extras.....	353 38		
John Duffy, constructing sewer.....	5,518 50		
John Duffy, extras.....	187 00		
Labor	214 75		
		13,962 18	
THROOP STREET SEWER.			
M. Mulany, constructing sewer.....	$1,815 45		
M. Mulany, extras.....	10 75		
Labor	29 50		
		1,855 70	
Amounts carried forward.....		$908,222 07	$975,740 84

		Cash Payments.	*True C*
Amounts brought forward		$908,222 07	$975,74
TWENTY-THIRD STREET SEWER.			
T. McQueeney, constructing sewer.....	$3,552 90		
T. McQueeney, extras.....	2 25		
Woodruff & Raffin, constructing sewer.	714 00		
Labor.....	109 50		
		4,378 65	
HARRISON STREET SEWER.			
M. Malony, constructing sewer.....	$10,786 80		
Labor.....	252 00		
		11,038 80	
HOYNE STREET SEWER.			
Dickey & O'Brien, constructing sewer.	$511 00		
Labor.....	3 50	514 50	
ABERDEEN STREET SEWER.			
Labor.....		4 75	
DESPLAINES STREET SEWER.			
Brown & Flanery.....	$5,077 80		
Brown & Flanery, extras.....	47 60		
Labor.....	43 00		
		5,168 40	
ELM STREET SEWER.			
Labor.....		16 00	
UNION STREET SEWER.			
Labor.....		13 50	
DIVISION STREET SEWER.			
C. Gladding, constructing sewer.....	$4,641 67		
Cement.....	24 43		
Labor.....	952 62		
		5,618 72	
MILWAUKEE AVENUE SEWER.			
J. Duffy, constructing sewer.....	$1,990 79		
Kelly, Langan & McGraw, const'g sewer..	1,246 05		
Labor.....	185 00		
		3,421 84	
SEVENTEENTH STREET SEWER.			
T. McQueeney, constructing sewer	$418 00		
" extras	19 40		
Labor	46 50		
		483 90	
Amounts carried forward.....		$938,881 13	$975,74

		Cash Payments.	*True Cost.*
Amounts brought forward.....		$938,881 13	$975,740 84
SCHILLER STREET SEWER.			
M. McNichols, constructing sewer.....	$1,781 50		
" extras.....	55 46		
Labor.....	74 00		
		1,910 96	
SIEGEL STREET SEWER.			
M. McNichols, constructing sewer.....	$1,785 00		
" extras.....	79 03		
Labor.....	49 50		
		$1,913 53	
GOETHE STREET SEWER.			
M. McNichols, constructing sewer.....	$1,528 50		
" extras.....	70 47		
Labor.....	53 00		
		1,651 97	
TWENTY-NINTH STREET SEWER.			
P. D. Betticher, constructing sewer.....	$1,155 66		
" extras.....	19 57		
Labor.....	29 00		
		1,204 23	
TWENTY-FIFTH STREET SEWER.			
P. D. Betticher, constructing sewer.....	$150 60		
" extras.....	25 63		
Woodruff & Raffin, constructing sewer ...	416 00		
Labor.....	51 50		
		652 73	
TWENTIETH STREET SEWER.			
Woodruff & Raffin, constructing sewer....	$2,418 50		
Labor.....	18 50		
		2,437 00	
TWENTY-FOURTH STREET SEWER.			
P. D. Betticher, constructing sewer.....	$465 50		
" extras.....	38 87		
Woodruff & Raffin, constructing sewer....	413 00		
Labor.....	10 50		
		927 87	
CASS STREET SEWER.			
J. McHugh, constructing sewer.....	$420 70		
" extras.....	2 25		
Labor.....	39 50		
		462 45	
Amounts carried forward.....		$950,041 87	$975,740 84

		Cash Payments.	True
Amounts brought forward...		$950,041 87	$975,
KRAMER STREET SEWER.			
Brown & Flanery, constructing sewer	$812 50		
" " extras.....	20 25		
Labor	25 50		
		858 25	
PARK AVENUE SEWER.			
Dickey & O'Brien, constructing sewer....$1,523 70			
" " extras...	11 25		
Labor.....	33 00		
		1,567 95	
WARREN AVENUE SEWER.			
Dickey & O'Brien, constructing sewer....$2,095 25			
" " extras.....	9 00		
Labor.....	69 00		
		2,173 25	
LIBERTY STREET SEWER.			
Brown & Flanery, constructing sewer....	$685 30		
" " extras.....	10 12		
Labor	68 25		
		763 67	
FORQUER STREET SEWER.			
Brown & Flanery, constructing sewer....	$811 20		
" " extras.....	2 25		
Labor	96 25		
		909 70	
FINNEL STREET SEWER.			
Labor.....		21 00	
FRANKLIN STREET SEWER.			
J. McHugh, constructing sewer	$454 95		
" extras	7 50		
Labor	20 00		
		482 45	
BUDDAN STREET SEWER.			
T. McQueeney, constructing sewer	$364 65		
Labor	29 00		
		393 65	
BREMER STREET SEWER.			
J. McHugh, constructing sewer	$958 00		
" extras.....	4 81		
Labor	81 50		
		1,044 31	
Amounts carried forward.....		$958,256 10	$975,7

		Cash Payments.	*True Cost.*
Amounts brought forward.....		$958,256 10	$975,740 84
NORTHERN AVENUE SEWER.			
P. D. Betticher, constructing sewer	$381 90		
" extras.....	5 23		
Labor	17 00		
		404 13	
CANALPORT AVENUE SEWER.			
T. McQueeney, constructing sewer.....$2,729 75			
" extras	211 12		
Labor	322 92		
		8,263 79	
QUARRY STREET SEWER.			
Labor		150 50	
GRANT STREET SEWER.			
Labor		45 50	
SOUTH PARK AVENUE SEWER.			
Labor		8 00	
MONROE STREET SEWER.			
Labor		40 00	
PEARSON STREET SEWER.			
J. McHugh, constructing sewer	$393 95		
" extras.....	5 00		
		398 95	
HILL STREET SEWER.			
J. McHugh, constructing sewer		110 00	
WHITE STREET SEWER.			
J McHugh, constructing sewer		384 70	
HINSDALE STREET SEWER.			
J. McHugh, constructing sewer	$326 00		
" extras.....	3 27		
		329 27	
GRANGER STREET SEWER.			
M. McNichols, constructing sewer.....$1,786 75			
" extras.....	51 60		
		1,838 35	
EIGHTEENTH STREET SEWER.			
M. Mulany, constructing sewer.....		690 52	
CANAL STREET SEWER.			
M. Mulany, constructing sewer		1,013 08	
Amounts carried forward.....		$966,932 89	$975,740 84

	Cash Payments.	Tr
Amounts brought forward	$966,982 89	$97
LEAVITT STREET SEWER.		
Drekey & O'Brien, constructing sewer	574 48	
WOOD STREET SEWER.		
Drekey & O'Brien, constructing sewer	549 20	
GREEN STREET SEWER.		
Finnucan & Hallalin, constructing sewer	1,941 25	
HUBBARD STREET SEWER.		
Finnucan & Hallalin, constructing sewer	511 20	
HANOVER STREET SEWER.		
P. Doyle, constructing sewer	1,307 37	
VAN BUREN STREET SEWER.		
Woodruff & Raffin, constructing sewer	4,476 49	
REUBEN STREET SEWER.		
Woodruff & Raffin, constructing sewer	4,105 41	
WELLS STREET SEWER.		
Labor	122 50	
SANGER STREET SEWER.		
Labor	15 00	
TWENTY-FIRST STREET SEWER.		
Woodruff & Raffin, constructing sewer	2,425 27	
BICKERDYKE STREET SEWER.		
Brown & Flanery, constructing sewer	831 25	
SEBOR STREET SEWER.		
Brown & Flanery, constructing sewer $243 60		
" " extras..... 11 37		
	254 97	
MATHER STREET SEWER.		
Brown & Flanery, constructing sewer	427 90	
DUPUYSTER STREET SEWER.		
Brown & Flanery, constructing sewer	423 42	
SUNDRY SEWERS.		
Amount paid back for money which was advanced to construct sewers built by private parties	5,872 63	
Amounts carried forward	$990,771 23	$97

		Cash Payments.	*True Cost.*
Amounts brought forward		$990,771 23	$975,749 84
SINKING FUND.			
Amount paid Sewerage and River Improvement Sinking Funds, for their proportion of Sewerage Tax for 1868 and 1869		118,715 40	118,715 40
PRIVATE DRAINS.			
North Clark street drains.....	$707 82		
West Adams street drains.....	2,140 80		
West Madison street drains	7,705 07		
Washington street drains	88 20		
La Salle street drains.....	3,173 99		
Halsted street drains.....	2,614 25		
Kinzie street drains	190 35		
Archer avenue drains.....	332 28		
Prairie avenue drains.....	1,227 00		
Canal street drains	2,846 26		
Clinton street drains.....	1,216 12		
Dearborn street drains.....	689 02		
Twelfth street drains	219 60		
Lake street drains.....	2,725 64		
Filling Harrison and Polk streets.....	367 20		
Polk street drains	127 68		
Jefferson street drains	639 93		
Wells street drains	448 10		
Randolph street drains	641 59		
Eighteenth street drains	391 86		
West Washington street drains.....	1,537 51		
Wabash avenue drains....	1,511 18		
Division street drains	298 20		
Fourteenth street drains	75 00		
Calumet avenue drains.....	736 65		
Harrison street drains	969 00		
Jackson street drains	396 00		
South Park avenue drains	2,214 90		
North avenue drains.....	1,661 75		
		37,892 95	
DEDUCT—			
Amount rec'd from private drains..	$23,273 01		14,619 94
HOUSE DRAINS.			
Labor	$3,090 63		
Inspectors	1,881 00		
Draughtsmen	1,200 00		
Permit clerk.....	924 40		
Amounts carried forward	$7,096 03	$1,147,379 58	$1,109,076 18

		Cash Payments.	T
Amounts brought forward	$7,096 03	$1,147,379 58	$1,1
Car fares	204 60		
Advertising	410 13		
Printing	13 50		
Cement	22 41		
Stationery	16 70		
Constructing drains	26 66		
Repairing pipe	14 45		
Hardware	5 50		
		7,809 98	
ADD—			
Pipe used	$6,355 25		
DEDUCT—			
Amount received from assessments and permits issued	13,080 39		
Total cash expenditures		$1,155,189 56	$1,1

SEWERAGE SINKING FUND.

RECEIPTS.

Proportion of Sewerage Tax for 1868	$31,069 20		
" " " " 1869	43,885 24		
		$74,954 44	
Balance in hands of Treasurer, April 1, 1869		32,938 00	
			$107,892 91

EXPENDITURES.

Forty Bonds purchased and cancelled, Nos. 2651, 2652, 2654 to 2691	$37,200 00		
Expense of foreclosure of mortgage.....	323 18		
		$37,523 18	
Balance in hands of Treasurer, April 1, 1870		70,369 73	
			$107,892 91

RIVER IMPROVEMENT FUND.

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC WOR
MARCH 31, 1870.

	Dr.	Cr.
River Improvement Fund in hands of Treasurer.	$152,511 03	
Expense of Survey previous to adoption of plan .	1,269 23	
American Exchange National Bank coupon acc't.	1,680 00	
River Improvement Loan Interest.....	112,265 57	
Expense of Survey	28,943 19	
River Improvement Salary Account.....	30,683 37	
" " Office Expense	1,582 16	
Geo. Taylor, Comptroller	92,000 00	
River Improvement Sinking Fund		$ 54,63
River Improvement Bonds, 7 per cent.		1,923,00
Discount on River Improvement Bonds.....	70,567 87	
River Improvement Miscellaneous Expense	32,613 84	
C. B. Kimball, Contractor	75,286 98	
Sanger, Steel & Co., Contractors	62,292 59	
Fox, Howard & Walker, "	128,649 95	
" " " "	244 255 08	
" " " "	63,114 13	
" " " "	94,103 50	
Hosch & Harroon, "	42,028 25	
C. E. Boyer, "	232,569 70	
Hosch & Van Slyck, "	70,244 00	
S. W. Norton, "	74,608 98	
Lee & Graham, "	67,723 75	
J. A. Hendricks & Co., "	49,748 30	
Carkin & Kimball, "	98,487 91	
Hugh Maher, "	30,202 20	
Barnard & Gowen, "	50,333 60	
J. J. Parry, "	55,598 50	
Fox, Howard & Walker, "	14,271 50	
	$1,977,635 18	$1,977,63

RIVER IMPROVEMENT FUND.

STATEMENT of Cash Receipts and detailed statement of the cost of various operations conducted by the Board of Public Works from April 1st, 1869, to March 31st, 1870, inclusive:

RECEIPTS.

Proceeds sale of 844 River Improvement Bonds, including accrued interest	$804,691 25	
River Improvement Sinking Fund tax	50,751 53	
Amount of tax for interest	96,457 32	
Stone sold	1,352 00	
		$953,252 10

EXPENDITURES.

		Cash Payments.	*True Cost.*
INTEREST ACCOUNT.			
Amount of remittance to pay July, 1869, and January, 1870, interest	$79,498 25		
Coupons paid by City Treasurer	6,776 39		
		$86,274 64	$86,274 64
MISCELLANEOUS EXPENSE.			
Pumping at Bridgeport	$15,499 58		
Tolls lost	9,811 85		
Extra labor	4,460 00		
Labor on dams	1,639 02		
Engraving bonds	218 00		
Interest on advance	156 98		
Labor and material	728 37		
Labor on coupons	293 21		
Express on bonds	543 80		
Advertising	424 00		
Telegrams	4 10		
Inspecting sold stone	27 04		
One desk	25 00		
Rent of office	35 01		
Car fares	2 70		
Hardware	10 00		
Stationery	87 18		
		33,965 84	
DEDUCT—			
Amount received for stone sold	$1,352 00		32,613 84
Amounts carried forward		$120,240 48	$118,888 48

		Cash Payments.	*True*
Amounts brought forward.....		$120,240 48	$118,
EXPENSE OF SURVEY AND SALARIES.			
Salary of Commissioners.....	$5,750 00		
" Secretary	183 37		
" Engineer.....	2,433 30		
" Ass't Engineer, rodman and axeman.....	3,343 25		
		11,709 92	11,
CONTRACTS.			
C. B. Kimball, on account contract...	$18,156 35		
Fox, Howard & Walker, " ...	30,000 00		
" " " " ...	46,796 75		
" " " " ...	45,005 00		
" " " " ...	86,916 75		
Hosch & Harroon, " ...	20,429 75		
C. E. Boyer, " ...	54,804 94		
Hosch & Van Slyck, " ...	30,493 75		
S. W. Norton, " ...	22,000 00		
Lee & Graham, " ...	44,353 00		
J. A. Hendricks, " ...	11,648 38		
Carkin & Kimball, " ...	89,509 78		
Hugh Maher, " ...	28,684 10		
Barnard & Gowan, " ...	40,898 60		
J. J. Parry, " ...	55,598 50		
Fox, Howard & Walker, " ...	14,271 50		
		639 567 15	639
Total cash expenditures.....		$771,517 55	$770,
Balance in hands of Treasurer April 1st, 1870...		152,511 03	
		$924,028 58	

CITY DEPARTMENT.

TRIAL BALANCE LEDGER, BOARD OF PUBLIC WORKS, MARCH 31, 1870.

	Dr.	*Cr.*
Appropriation Fund in hands of Treasurer	$617,911 33	
North Division	2,008 17	
South Division		$1,073 01
West Division		26,401 09
City Office Expense	2,508 87	
North Division Sidewalks		2,942 17
South " "		373 87
West " "		4,097 00
Public Parks		17,702 76
Washington Street Tunnel	4,408 25	
Public Buildings		22,701 55
Chicago Cemetery		3,978 85
Lumber account	890 00	
LaSalle Street Tunnel	1,266 64	
House Moving and Street Permits		18,481 88
Street Signs		2,004 78
Street Lamps		8,391 41
Public Hydrants		507 65
Samuel Polkey, Receiving Clerk	308 12	
Warrant No. 480		308 12
City Proportional Expense		7,452 24
House Numbers		2,044 53
Public Benefits		350,427 75
Chicago Harbor		26,905 42
Land Damages		57,262 00
Bridge Department		5,505 15
Archer Road Bridge		6,000 00
Indiana Street "		1,925 00
Erie Street "		20,000 00
Western Avenue "		4,195 50
Adams Street "		4,582 74
Division Street "		4,037 41
Twenty-second Street Bridge		30,000 00
	$629,301 38	$629,301 38

BOARD OF PUBLIC WORKS APPROPRIATION F

STATEMENT of the cash receipts by the Board of Public W
from April 1, 1869, to March 31, 1870, inclusive, and d
statement of the cost of various operations conducted
Board during the same time:

RECEIPTS.

Amount appropriated by Common Council		$1,216,581 01
Amount of Temporary Loans for running expenses,		353,343 67
Received from Special Assessments for expenses		96,713 23
Permits issued		6,065 40
Repairing Streets		3,924 42
Vouchers cancelled		8,046 82
Received for Numbers		240 00
" " Constructing Walks		369 70
" " Damages to Bridges		745 73
" " Cleaning Snow		417 00
Lamp-posts		88 50
Sand sold		147 20
Surveyor's License		51 00
Old awning sold		1 25
	$1,685,734 92	
Balance in hands of City Treasurer, April 1, 1869	385,118 97	
		$2,07

EXPENDITURES.

NORTH DIVISION.

	Cash Payments.	Tr
Labor on streets	$39,981 07	
Cleaning streets	7,399 06	
Labor repairing streets	2,600 36	
Lumber	1,920 26	
Cindering streets	1,810 75	
Iron and nails	543 73	
Cement	426 21	
Brick used	629 65	
Amount carried forward	$55,311 09	

		Cash Payments.	*True Cost*
Amount brought forward	$55,311 09		
Gravel	220 50		
200 loads clay	137 50		
Hardware, tools, etc	128 52		
Work at shop in 1868	103 04		
Composition	42 00		
Freight on lumber	22 00		
Repairing curb wall	20 50		
Lanterns	10 00		
Lumber used charged lumber account	5 282 02		
Interest on temporary loans	1,644 67		
		$62,921 84	
DEDUCT—			
Amount received for labor	$614 45		$62,307 39
SOUTH DIVISION.			
Labor on streets	$58,343 48		
Cleaning streets	24,715 89		
Lumber	7,024 37		
Lumber used charged lumber account	7,925 04		
Cinders	3,151 00		
Paving cement	2,701 20		
Interest on temporary loans	2,467 01		
Stone used charged stone account	1,573 03		
Iron and nails	1,113 09		
Gravel	1,350 45		
Brick used	629 65		
Freight on lumber	420 00		
Hardware, repairing tools, etc	131 47		
Curbing	153 00		
Labor at shop in 1868	103 05		
McAdam	520 34		
Scavenger work	175 00		
Miscellaneous cash items	40 70		
Advertising	25 50		
Rubber clothing	6 00		
Lantern	2 90		
Broom	1 75		
		$112,573 91	
DEDUCT—			
Amount received for labor	$3,438 92		
" voucher drawn in error	102 00		
" received for cleaning snow	111 00		
	$3,646 92		
			$108,926 99
Amounts carried forward		$175 495 75	$171,234 38

		Cash Payments.	True
Amounts brought forward.....		$175,495 75	$171,2
WEST DIVISION.			
Labor on streets.....	$108,653 52		
Cleaning streets.....	12,752 20		
Lumber.....	7,032 81		
McAdam.....	2,869 88		
Iron and nails.....	1,779 13		
Paving cement.....	1,244 66		
Cinders.....	980 50		
Brick used.....	629 65		
Damage to carriage.....	300 00		
Planking Main street.....	200 00		
Building walls.....	111 32		
Labor at shop in 1868.....	103 05		
Hardware, repairs, tools, etc.....	133 86		
Freight on lumber.....	80 00		
Scrapers.....	43 50		
Plows.....	32 00		
Painting.....	11 50		
Scavenger work.....	4 00		
Brooms.....	1 50		
Interest on temporary loans.....	2,467 01		
Lumber used charged lumber account..	7,925 05		
Stone used charged stone account.....	1,158 23		
		148,513 37	
DEDUCT—			
Amount received for labor.....$101 25			
" rec'd for cleaning snow.. 28 00			
	$329 25		148,1
SIDEWALKS, NORTH DIVISION.			
Building walk.....	$244 44		
Superintendent's salary.....	400 00		
Salaries of Inspectors.....	1,797 32		
		2,441 76	
DEDUCT—			
Amount rec'd for const'g walk...$22 45			
Voucher cancelled..... 2 52			
	$24 97		2,4
SIDEWALKS, SOUTH DIVISION.			
Building walk.....	$1,935 25		
Salary of Superintendent.....	400 00		
Salaries of Inspectors.....	2,687 50		
Labor.....	24 50		
		5,047 25	
Amounts carried forward.....		$331,498 18	$321,8

		Cash Payments.	*True Cost.*
Amounts brought forward		$331,498 13	$321,835 29
DEDUCT—			
Amount rec'd for const'g walk...$36 40			
" voucher cancelled 52 12			
	$88 52		4,958 73
SIDEWALKS, WEST DIVISION.			
Building walks	$605 77		
Salary of Superintendent	400 00		
Salary of Inspectors	3,534 61		
		4,450 38	
DEDUCT—			
Amount rec'd for const'g walk..$310 85			
" " " vouchers canc'd, 15 89			
	$326 74		4,213 64
CERTIFICATE OF INDEBTEDNESS.			
Temporary loans		352,343 67	
DEDUCT—			
Amount received for temporary loans, $352,343 67			
OFFICE EXPENSES AND SALARIES.			
Salary of Commissioners	$3,999 99		
Salary of Secretary and Assistant	1,424 98		
Salary of City Engineer	1,500 00		
Salary of Superintendent	983 33		
Salaries of Book-keeper and Clerks	3,222 41		
Salary of Assistant Engineers	8,746 93		
Salaries of draughtsmen	8,581 75		
Salaries of special assessment clerks	17,921 09		
Salaries of mes'nger, janitor and watchman	796 52		
Stationery and blank books	1,425 09		
Advertising	12,119 46		
Office rent	2,300 00		
Printing Seventh Annual Report	330 83		
Printing Eighth " "	574 70		
Coal used	362 00		
Miscellaneous cash items	142 77		
Commissions on temporary loan	152 36		
Notary fees	229 90		
Pay roll rodmen and labor	3,765 58		
Hardware	110 56		
Printing	858 32		
Furniture	195 98		
Keeping horses	222 31		
Amounts carried forward		$688,387 18	$331,007 66

Amounts brought forward	
Revenue stamps.....	
Ice	
Gas.....	
Draughtsmen's tools.....	
Subscription to daily papers	
Map of Chicago.....	
Tape line	
Gas fitting	
Matches	
Sprinkling.....	
Examining title.....	
Use of steamer	
Expense to Springfield.	
Sub. to London Engineering	
New awnings	
Oakum, etc.....	
Car fares, washing towels, painting, etc..	
DEDUCT—	
Cost of proceed'gs on sundry assessm'ts.	$
Surveyor's license and scale permit	
Old awning sold.....	
	$

LAKE PARK.

Lawn mower	
Planting trees	
Hauling dirt.....	
Building sidewalks	
Building band house	
Labor	
Salary of Superintendent.....	
Salary of Inspector.....	
Lumber	
Grass seed	
Coal.....	

UNION PARK.

Labor, mowing grass, carpenter work, etc.	$
Lumber	
Roofing	
Plumbing	
Gravel.....	
Amounts carried forward	1

		Cash Payments.	*True Cost.*
Amounts brought forward	$14,985 98	$768,096 90	$339,791 53
Feed for animals	632 33		
Trees	828 75		
Stone for fountain	841 76		
Painting	348 30		
Sprinkling wagon	260 00		
Wire work	103 26		
Iron works	145 91		
Laying sewer	197 95		
Lawn mowers	111 60		
Hardware	227 61		
Salary of Superintendent	400 00		
Fountain fixtures	175 00		
Chairs	35 00		
Miscellaneous items	5 14		
Painting signs	3 00		
Iron and nails	82 86		
Ashes	40 00		
One flag	38 70		
Water permit	20 90		
Advertising	15 00		
Gas	19 25		
Tools	63 96		
Grass seed	38 80		
		19,621 06	19,621 06
JEFFERSON PARK.			
Labor	$5,374 91		
Stone	29 30		
Plumbing	94 50		
Miscellaneous items	4 10		
		5,502 81	5,502 81
LINCOLN PARK.			
Paid Nelson & Benson for grading, cindering, building walks and drives, planting trees, and keeping park in repair	$28,837 66		
Interest on temporary loans	882 50		
Feed for animals	242 10		
Iron work	357 91		
Lamps	211 35		
Wire fence	270 70		
Labor	318 60		
Lumber	174 39		
Salary of Superintendent	400 00		
Painting	5 00		
Amounts carried forward	31,700 21	$793,220 77	$364,915 40

		Cash Payments.
Amounts brought forward	$31,700 21	$79 1,220 77 $3
One flag	$67 50	
Miscellaneous items	4 14	
Chairs	31 00	
Advertising	15 50	
Repairing hydrant	12 37	
		31,830 72
WASHINGTON PARK.		
Labor	$98 00	
Repairing fence	130 00	
Planting trees	467 00	
		695 00
DEARBORN PARK.		
Labor	$33 12	
Lumber	90 00	
Sprinkling	180 00	
Dirt	71 50	
Planting trees	300 00	
		674 62
ELLIS PARK.		
Labor	$4,513 13	
Plumbing	315 96	
Lumber	25 20	
Repairing pipe	2 50	
		4,856 79
PUBLIC BUILDINGS—ARMORY.		
Labor, carpenter work	$752 00	
Painting	87 00	
Glazing	21 51	
		860 51
COURT HOUSE.		
Engineer	$40 00	
Sprinkling	120 00	
Glazing	12 77	
		172 77
NORTH MARKET.		
Carpenter work	$209 00	
Painting	490 00	
Advertising	46 50	
		745 50
BRIDEWELL.		
Carpenter work	$437 38	
Painting	8 91	
Gas-fitting	36 09	
Amounts carried forward	$482 38	$833,056 68 $40

		Cash Payments.	*True Cost.*
Amounts brought forward	$482 38	$833,056 68	$404,751 31
Hardware	22 60		
Oil and lead	27 41		
Lumber	211 94		
Nails	1 22		
One scale	88 82		
		834 37	834 37
LUMBER ACCOUNT.			
Lumber purchased and not used		150 00	150 00
CHICAGO HARBOR.			
Dredging	$56,035 73		
Building docks	4,111 95		
Salary of Harbor Master and Assistant	2,505 96		
Interest on temporary loans	1,543 38		
Labor	408 75		
Inspectors	165 00		
Sounding	273 00		
Use of tug	183 00		
Oil for lighthouse	18 60		
Lighthouse tender	69 72		
Paint and lead	4 25		
Painting sign	6 60		
Printing	41 50		
Rope, etc.	12 80		
Use of docks	50 00		
Advertising	36 88		
Stone	18 00		
		65,485 12	65,485 12
CHICAGO CEMETERY.			
Gate keeper	$900 00		
Advertising	9 00		
		909 00	909 00
HOUSE MOVING AND STREET PERMITS.			
Special constables	$2,000 00		
Permit clerks	254 89		
		2,254 89	
Received for permits	$6,062 40		
STREET SIGNS.			
Putting up signs		995 22	995 22
STREET LAMPS.			
New lamps and posts	$404 00		
Repairs on lamps	5 00		
		409 00	
DEDUCT—			
Amount received for broken posts	$88 50		320 50
Amounts carried forward		$904,094 28	$473,435 52

		Cash Payment.	T
Amounts brought forward.....		$904,094 28	$473
PUBLIC HYDRANTS.			
Putting in hydrants.....	$186 92		
Repairs of hydrants	92 31		
		279 23	
HOUSE NUMBERS.			
Replating plate for number.....		22 00	
Amount received for numbers..$1,240 00			
WASHINGTON STREET TUNNEL.			
Engineer and fireman	$494 66		
Labor	1,334 51		
Bricks.....	787 05		
Coal.....	118 10		
Cleaning tunnel.....	699 30		
Gas fixtures and fitting	309 94		
Cement.....	181 50		
Broom.....	1 75		
Hardware	27 13		
Salt	8 35		
Packing	37 36		
Repairing pipe.....	70 00		
Step ladder	7 00		
Carpenter work	44 00		
Hose	14 00		
Gas	28 10		
		4,163 25	4
LA SALLE STREET TUNNEL.			
Engineer	$800 00		
Draughtsman	466 64		
		1,266 64	1
BRIDGE DEPARTMENT.			
Carpenter work.....	$12,350 39		
Lumber	4,867 20		
Driving piles.....	3,712 39		
Painting and glazing	1,422 68		
Interest on temporary loans.....	1,290 45		
Assistant Superintendent's salary and car fares	2,014 61		
Balance of contract Twelfth street bridge.	1,853 88		
Repairing bridges.....	3,208 12		
Iron and nails.....	1,246 30		
Waste	46 42		
Repairing clocks	11 00		
Brooms.....	91 95		
Amounts carried forward	32,115 39	$909,825 40	$479

		Cash Payments.	*True Cost.*
Amounts brought forward	$32,115 39	$909,825 40	$479,144 64
Use of tugs	$197 00		
Stationery	12 00		
Salt	3 25		
Car fares	17 00		
Chain, oakum, etc	169 55		
Castings	870 56		
Rollers	13 50		
Labor at shop	250 56		
Horse feed	10 15		
Bells	18 00		
Blacksmith work	288 75		
Tar kettle	14 00		
One pair oars	9 75		
Pails	8 50		
Axle grease	3 50		
Coal	467 50		
Hardware	74 00		
Printing	46 00		
Advertising	268 44		
Lanterns and repairs of same	384 16		
Oil and lard	266 35		
		35,457 91	
DEDUCT—			
Am't rec'd for damages $345 73			
" " from State st. viaduct, 400 00			
	745 73		34,712 18
RUSH STREET BRIDGE.			
Tending bridge		2,300 00	2,300 00
STATE STREET BRIDGE.			
Tending bridge		1,960 00	1,960 00
CLARK STREET BRIDGE.			
Tending bridge		1,940 00	1,940 00
WELLS STREET BRIDGE.			
Tending bridge		1,940 00	1,940 00
LAKE STREET BRIDGE.			
Tending bridge		1,940 00	1,940 00
RANDOLPH STREET BRIDGE.			
Tending bridge		1,780 00	1,780 00
MADISON STREET BRIDGE.			
Tending bridge		1,700 00	1,700 00
Amounts carried forward		$958,843 31	$527,416 82

Amounts brought forward.....

VAN BUREN STREET BRIDGE.

Tending bridge.....

POLK STREET BRIDGE.

Fox & Howard, constructing bridge.....$29,
A. Wallbaum, building abutment 2,
Tending bridge 1,
Fox & Howard, extras.....

TWELFTH STREET BRIDGE.

Tending bridge.....

EIGHTEENTH STREET BRIDGE.

Tending bridge

HALSTED STREET BRIDGE.

Tending bridge

ARCHER AVENUE BRIDGE.

Fox & Howard, Est. No. 1, const. bridge $6,00
Tending bridge 52

FULLER STREET BRIDGE.

Tending bridge.....

REUBEN STREET BRIDGE.

Tending bridge.....

KINZIE STREET BRIDGE.

Fox & Howard, constructing bridge...$15,85
Tending bridge 1,715

INDIANA STREET BRIDGE.

Fox & Howard, constructing bridge...$43 50
Tending bridge 1,46
Inspector 7

ERIE STREET BRIDGE.

Tending bridge

CHICAGO AVENUE BRIDGE.

Tending bridge

NORTH AVENUE BRIDGE.

Tending bridge

CLYBOURN AVENUE BRIDGE.

Tending bridge

Amounts carried forward

		Cash Payments.	*True Cost.*
Amounts brought forward.....		$1,074,117 62	$642,691 13
NORTH HALSTED STREET BRIDGE.			
Tending bridge.....		1,040 00	1,040 00
THROOP STREET BRIDGE.			
Tending bridge.....		1,460 00	1,460 00
WESTERN AVENUE BRIDGE.			
F. E. Canda, constructing bridge.....		8,925 00	8,925 00
ADAMS STREET BRIDGE.			
Fox & Howard, constructing bridge...	$40,947 04		
Building viaduct.....	3,640 51		
" abutment.....	2,943 05		
Inspector.....	50 00		
Interest on temporary loan.....	666 66		
		48,247 26	48,247 26
DIVISION STREET BRIDGE.			
Fox & Howard, constructing bridge...	$3,294 84		
Tending bridge.....	607 75		
		3,902 59	3,902 59
LAND DAMAGES.			
For land damages at Adams st. bridge.		22,738 00	92,738 00
PUBLIC BENEFITS			
Paving intersections of streets.....	$267,625 19		
Labor on catch basins.....	7,482 25		
Improvement of sidewalks.....	3,045 77		
Opening streets.....	4,599 81		
Widening streets.....	2,897 78		
Filling intersections.....	1,336 42		
Graveling.....	2,068 03		
Cement for catch basins.....	1,147 09		
Lumber " " "	832 19		
Patent fees on pavement.....	701 13		
Lamp posts.....	258 33		
Planking alleys.....	446 20		
Drains.....	61 90		
Ashes.....	10 00		
		292,512 09	292,512 09
Total cash expenditures.....		$1,452,942 56	$1,021,516 07

CITY BRIDEWELL

TRIAL BALANCE, LEDGER, BOA
MARCH 31ST,

City Bridewell Funds in hands of Treasurer		
City Bridewell Bonds		
Discount on City Bridewell Bonds		
Miscellaneous expense		
J. M. Van Osdell, Architect		
Kavanagh & Merriman, Contractors		
Clancey, Webb & Co.,	"	
Carter Brothers,	"	
Stewart & Eddy,	"	
Keeney & Campbell,	"	
J. W. Newell,	"	
A. Knisely,	"	
Richard Riley,	"	
Peterson & Patterson,	"	

CITY BRIDEWELL FUND.

STATEMENT showing the cash receipts and detailed account of work done under the charge of the Board of Public Works, during the year ending March 31, 1870:

RECEIPTS.

Proceeds of 219 Municipal Bonds	$206,827 57

EXPENDITURES.

		Cash Payments.	*True Cost.*
MISCELLANEOUS EXPENSE.			
Dredging	$7,892 48		
Labor	1,250 50		
Lumber	1,126 20		
Express on Bonds	76 00		
Engraving Bonds	120 00		
Nails	101 50		
Constructing drain	366 35		
Advertising	46 50		
Hardware	15 00		
Watchman	180 65		
		$11,175 18	$11,175 18
CONTRACTS.			
J. M. Van Osdel	$ 2,000 00		
Kavanagh & Merriman	87,943 54		
Clancey, Webb & Co.	1,900 00		
Carter Brothers	65,000 00		
Streeter & Eddy	11,500 00		
Heeney & Campbell	17,413 48		
J. W. Newell	1,000 00		
A. Knisely	5,000 00		
Richard Riley	2,244 00		
Peterson & Patterson	200 00		
		194,201 02	194,201 02
Total cash expenditures		$205,376 20	$205,376 20

CITY HALL

TRIAL BALANCE, LEDGER, BOA
MARCH 31, 1

City Hall Funds in hands of City Treasurer	
City Hall Bonds	
Discount on City Hall Bonds	
City Hall miscellaneous expense	
N. P. Loberg, Contractor	
L. H. Boldenweck, "	
Rose & Chapman, Architects	
Allen & Bartlett, Contractors	
F. Letz & Son, "	
Walworth, Twohig & Furze, "	
J. Hogan, "	
A. Knisely, "	
R. M. Welch, "	
Clark, Raffin & Co., "	

CITY HALL FUND.

STATEMENT showing the Cash Receipts and detailed account of work done during the year ending March 31st, 1870.

RECEIPTS.

Proceeds of 267 Municipal Bonds	$251,286 31

EXPENDITURES.

		Cash Payments.	*True Cost.*
MISCELLANEOUS EXPENSES.			
Gas	$601 69		
Coal	1,420 90		
Extension of pipe	527 28		
Labor	280 58		
Sewer pipe	273 22		
Engraving bonds	112 00		
Vault lights	118 66		
Salary of engineer and fireman	993 00		
Express on bonds	88 00		
Felting pipe	23 75		
Stationery	3 50		
Cement	27 68		
Interest on loan	60 16		
Advertising	65 00		
Caulking walks	60 32		
Hardware	95 04		
Hose	12 55		
		$4,763 33	$4,763 33
CONTRACTS.			
N. P. Loberg, Contractor	$37,500 00		
L. H. Boldenwick "	103,500 00		
Rose & Chapman, Architects	5,500 00		
Allen & Bartlett, Contractors	9,750 00		
F. Letz & Son, "	47,000 00		
Walworth, Twohig & Furse, Contractors	21,540 00		
Joseph Hogan, Contractor	6,479 83		
A. Knisely	3,294 59		
R. M. Welch	2,000 00		
Clark, Raffin & Co	800 00		
		237,364 42	237,364 42
Total cash expenditures		$242,127 75	$242,127 75

LA SALLE STREET TUNNEL FUN

TRIAL BALANCE, LEDGER, BOARD OF PUBLIC W
MARCH 31ST, 1870.

	Dr.
La Salle St. Tunnel Fund	$89,991 22
Miscellaneous expense	12,060 23
R. E. Moss, Contractor	45,098 66
Discount on La Salle St. Tunnel Bonds	7,849 89
La Salle St. Tunnel Bonds	
	$155,000 00

LA SALLE STREET TUNNEL FUND.

STATEMENT of the Cash Receipts and detailed account of work done under the charge of the Board of Public Works, during the year ending March 31, 1870:

RECEIPTS.

Proceeds of 155 Municipal Bonds	$147,150 11	
Contract forfeit	200 00	
		$147,350 11

EXPENDITURES.

		Cash Payments.	*True Cost.*
Sewer pipe	$1,350 00		
Assistant Engineer	1,200 00		
Inspectors	2,043 92		
224,172 lbs. asphalt	5,716 39		
Labor	690 00		
Draughtsman	699 96		
Engraving bonds	130 00		
Lamps	9 20		
Advertising	100 45		
Stationery	23 00		
Printing	60 00		
Hardware	11 85		
Cement	109 13		
Express on bonds	100 00		
Nails	7 33		
Coal	9 00		
		$12,260 23	
DEDUCT—			
Amount received for contract forfeit	$200 00		$12,060 23
CONTRACT.			
R. E. Moss, on account		45,098 66	45,098 66
Total cash expenditures		$57,358 89	$57,158 89

WASHINGTON STREET

STATEMENT showing the Cash Recei
work done under the charge of
during the year ending March 3

RECEIPTS.

Proceeds of 117 Municipal Bonds	

EXPENDITURES.

Rent of Dock	
Coal	
Tape	
Advertising	
Hardware	
Assistant Engineer	
Draughtsman	
Repairing gas pipe	
Iron fence	1
Painting	
Pay-roll Inspectors	
Repairing dock	
Cement	
Paint brushes	
Gas fitting	
Miscellaneous cash items	
Ladder	
Building sewer torn up for construction	1
Labor	1,
Plumbing	
Damages	7,
Repairing dock	
Labor at shop	
Lumber	
One dump cart	
Engraving	
Pumping engine and fixtures	2,
Brick	1,

CONTRACT.

Paid James K. Lake & Co., in full	
Total cash expenditures	

RECAPITULATION.

RECEIPTS.

Water Fund	$1,087,079 27	
Sewerage Fund	1,167,479 97	
River Improvement Fund	953,252 10	
City Appropriation Fund	1,685,734 92	
City Bridewell Fund	206,827 57	
City Hall Fund	251,286 31	
LaSalle Street Tunnel Fund	147,350 11	
Washington Street Tunnel Fund	110,707 57	
Sewerage Sinking Fund	74,954 44	
Total receipts		$5,684,672 26

EXPENDITURES.

Water Fund	$1,026,021 32	
Sewerage Fund	1,155,189 56	
River Improvement Fund	771,517 55	
City Appropriation Fund	1,452,942 56	
City Bridewell Fund	205,376 20	
City Hall Fund	242,127 75	
LaSalle Street Tunnel Fund	57,358 89	
Washington Street Tunnel Fund	82,128 78	
Sewerage Sinking Fund	37,523 18	
Total expenditures		$5,030,185 79

Respectfully submitted,

E. M. JOHNSON,
Bookkeeper.



